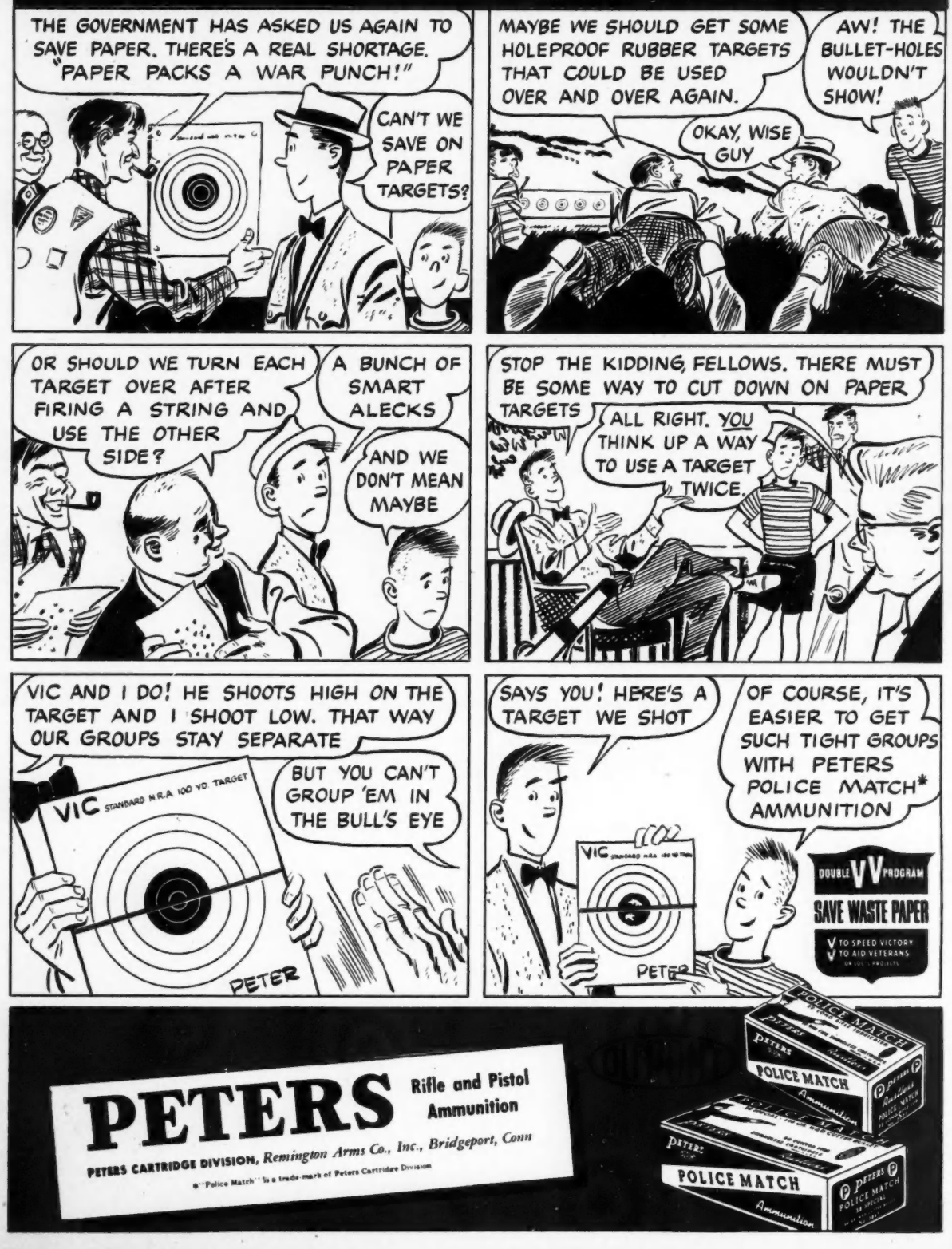
THE AMERICAN RIFLEMAN


THE GOVERNMENT HAS ASKED US AGAIN TO SAVE PAPER. THERE'S A REAL SHORTAGE. "PAPER PACKS A WAR PUNCH!"
CAN'T WE SAVE ON PAPER TARGETS?
MAYBE WE SHOULD GET SOME HOLEPROOF RUBBER TARGETS THAT COULD BE USED OVER AND OVER AGAIN.
AW! THE BULLET-HOLES WOULDN'T SHOW!
OKAY, WISE GUY
OR SHOULD WE TURN EACH TARGET OVER AFTER FIRING A STRING AND USE THE OTHER SIDE?
A BUNCH OF SMART ALECKS
AND WE DON'T MEAN MAYBE
STOP THE KIDDING, FELLOWS. THERE MUST BE SOME WAY TO CUT DOWN ON PAPER TARGETS
ALL RIGHT. YOU THINK UP A WAY TO USE A TARGET TWICE.
VIC AND I DO! HE SHOOTS HIGH ON THE TARGET AND I SHOOT LOW. THAT WAY OUR GROUPS STAY SEPARATE
VIC STANDARD N.R.A. 100 YD. TARGET
BUT YOU CAN'T GROUP 'EM IN THE BULL'S EYE
PETER
SAYS YOU! HERE'S A TARGET WE SHOT
OF COURSE, IT'S EASIER TO GET SUCH TIGHT GROUPS WITH PETERS POLICE MATCH* AMMUNITION
VIC
PETER
DOUBLE V PROGRAM
SAVE WASTE PAPER
V TO SPEED VICTORY
V TO AID VETERANS
PETERS Rifle and Pistol Ammunition
PETERS CARTRIDGE DIVISION, Remington Arms Co., Inc., Bridgeport, Conn
*"Police Match" is a trade-mark of Peters Cartridge Division
POLICE MATCH
Ammunition

"Balcote" will give your next B&L Spotting Scope an image at least 50% brighter

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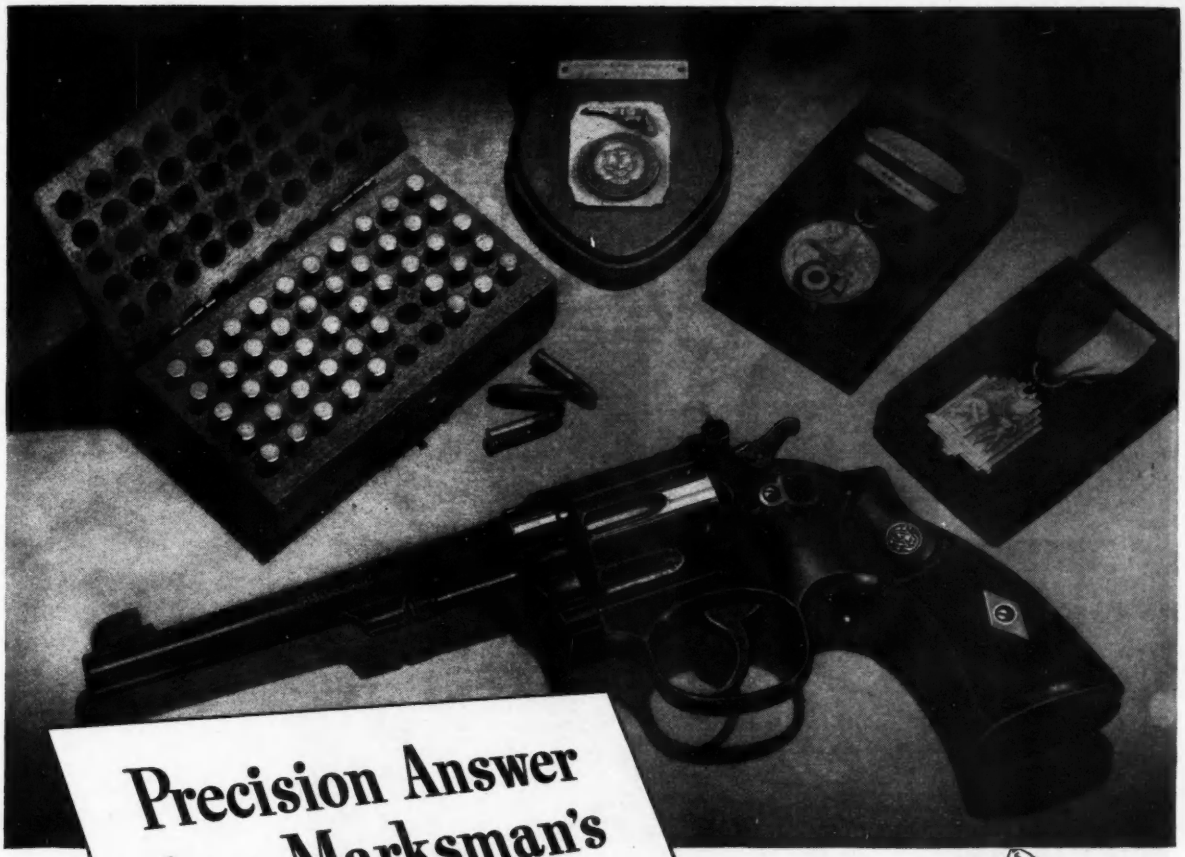

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You may be an old hand at target shooting . . . or a relative newcomer to this increasingly popular sport. Either way — it's a sure case of "love at first sight" when you meet the Smith & Wesson K-22 Masterpiece.

You pick it up and it feels "just right" . . . has the perfect weight and balance to help any shooter line up his sights easily and steadily. In action, it's a "dream" for speed and accuracy.

Introduced in 1940, the K-22 is the most modern .22 target revolver ever made — the only revolver which gives you *all three* of the following features that mean so much to target shooters . . .

Micrometer Click Sight — positive click adjustment for both windage and elevation.

Speed Lock — gives you shorter, faster, easier cocking . . . allows your grip to remain unchanged during fast fire.

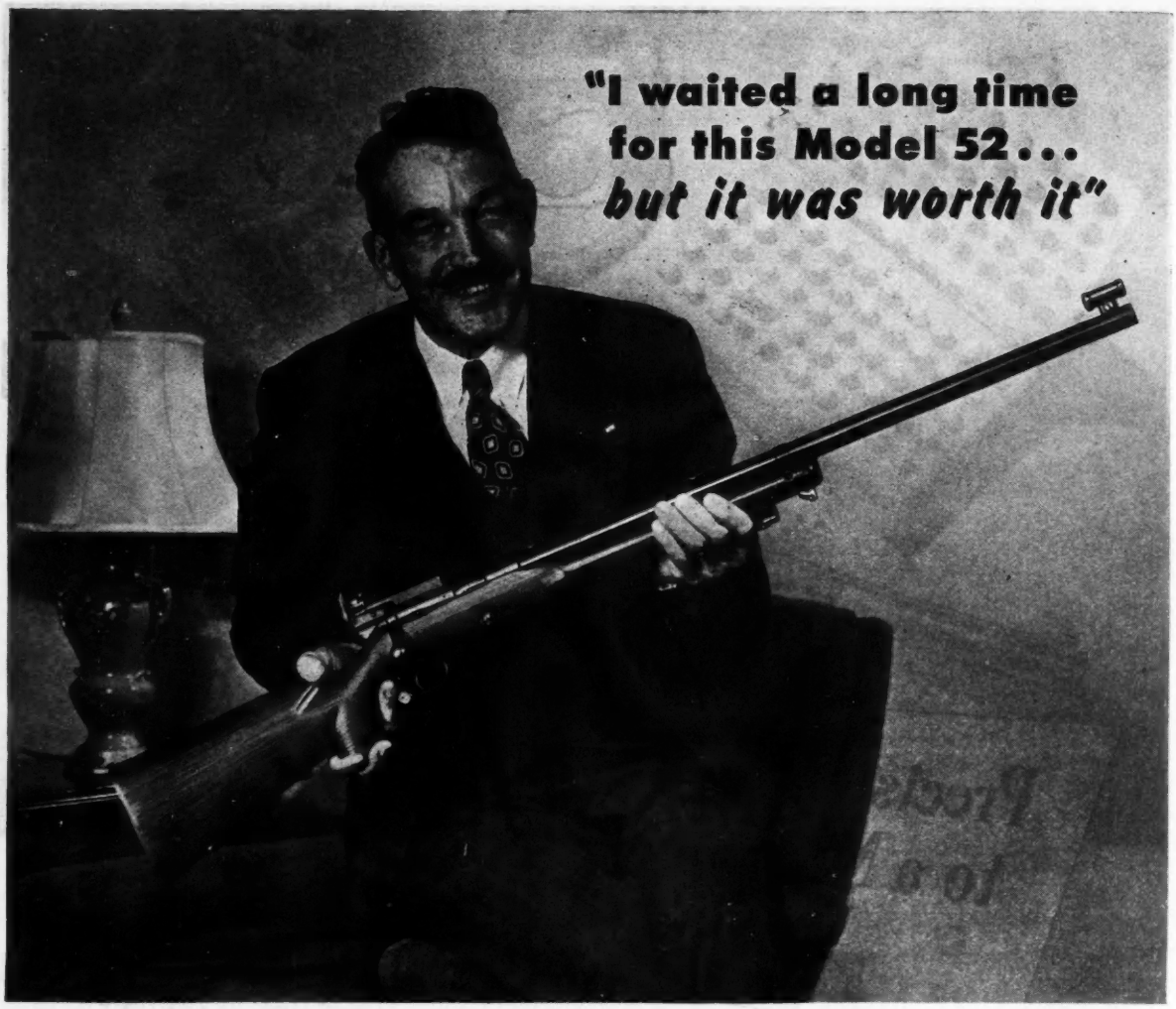
Built-in Anti-Backlash Trigger — travel to rear positively stops when hammer starts to fall.

As long as war demands continue, Smith & Wesson's output must be devoted to military contracts. But we hope the day is not too far distant when we can once again turn our hand to making precision revolvers for *you*, such as this K-22 Masterpiece. It's worth waiting for.

Smith & Wesson

The Thoroughbred of the Handgun World

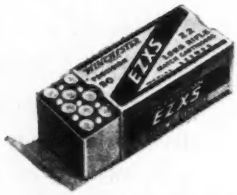
SPRINGFIELD 2, MASSACHUSETTS



"Yes, it was some time before Mary and I could enjoy little luxuries. We had our youngsters to think of and a home to build—but, finally came the day when we were well enough ahead to actually get some of the things we had wished for. Well do I remember the birthday when Mary gave me my Model 52 Winchester.

"Of course, she could have bought some other rifle, but she knew my heart was set on the Model 52. There just isn't any other target rifle that can match it. Believe me, if you want the finest 22 caliber target rifle money can buy, be sure to include the Winchester Model 52 in your post-war shooting plans". Winchester Repeating Arms Company, New Haven, Conn., Division of Olin Industries, Inc.

Since it was introduced in 1919, the Model 52 has been the undisputed leader of small bore target rifles. Its wins in state, regional and National and International Matches are without parallel in shooting history. The Model 52 offers a wide choice of different sight combinations or will be furnished without sights.



When ammunition again becomes available, you will want Winchester EZXS, 22's whose proven advantages make them the ideal cartridges for match competition.

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An Editorial

Veterans' Return

THE article by Colonel George O. Van Orden, USMC, which begins on Page 10 of this issue, is one of the most important we have ever published. There has been a great deal of viewing through rose-colored spectacles the future of hunting and target shooting in America when our veterans return to civilian life. Some outdoors publications have cheerfully forecast a rush into the fields and forests that will bring a new era of prosperity to conservation organizations, shooting clubs, and the outdoor trade. Many dealers and manufacturers are literally sitting on the edges of their chairs waiting for the great wave of new shooters to enter the marts of trade to buy anything that will enable the veterans to get afield with a gun. Rifle, skeet, and trap clubs that have languished through all the period when hard work and constructive activities were needed to keep clubs alive, are still sitting but now have an anticipatory gleam in their eyes waiting for the returned veterans to bring new members, new activities, new cash to the treasury.

No man is better qualified to analyze the postwar shooting ideas and needs of the returned veteran than Colonel Van Orden. More than any other class of veteran, the Marine, by reason of his training, is likely to return to civilian life wanting to shoot for recreation and qualified to take his place safely in the hunting field or on the competitive range. These two facts make "Retraining the Returned GI" an article of more than ordinary interest and value to sportsmen, game commissioners, club officers, and the trade.

Every Marine is indoctrinated with confidence in his rifle before he is given any specialist training. He may go into artillery, aviation, communications, engineers. He may become a clerk or a cook. But he starts out with a solid foundation of small-arms training. Nevertheless, thirty-five out of every hundred of these Marines either say positively they will not become hunters after the war or they are uncertain about it! If this is true of the shooting-conscious Marine, what is to be expected of three or four million Navy veterans, none of whom has had more than a cursory bit of small-arms training and most of whom are entirely unfamiliar with small arms? What of the six or seven million Army veterans who, after five or six days on the range at recruit camp (often under the instruction of men who had, in turn, acquired their knowledge (?) of small arms in a week or two) became a part of that great "rear echelon" which serviced the combat elements? If thirty-five out of every hundred *Marines* are doubtful of being interested in shooting after the war, it is reasonable to assume that seventy out of every hundred Navy and Army rear-echelon and service troops will have small interest in hunting or target shooting. A realistic appraisal of the situation indicates that a sales job needs to be done with the veterans if the roseate visions of some of our contemporaries are to be realized!

From our standpoint as riflemen and pistolmen, it is interesting to note that more of the Marines are interested in postwar rifle shooting and pistol shooting than in postwar shotgun shooting. Of interest, too, is the fact that, while thirty-four out of a hundred are not interested in postwar hunting, only nineteen out of a hundred are not interested in target shooting! Are our combat veterans weary of killing?

The need for *retraining* the veteran becomes pointedly evident in Colonel Van Orden's unbiased survey and frank discussion. Here, then, lies the great field for the local shooting club in the months and years ahead. An enormous potential of new, young, active shooters is becoming available; but it must be aggressively and intelligently sold the idea of shooting as a sport, and it must be *trained* to understand and appreciate sporting arms and to shoot them *safely*. There are not going to be thirteen million new shooters just because thirteen million men have been in uniform!

Our task lies clear before us. It is time to start to work!—C. B. L.

The AMERICAN RIFLEMAN

Official Journal of The National Rifle Association of America

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AUGUST

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Colonel Sidney Hinds may well have been remembering days at Camp Perry, shooting for the Wimbledon Cup, as he slid his rifle into position and took careful "Kentucky windage" on the crawling German.

Find an outfit whose officers believe in and demand marksmanship and you'll find men who know, and whose record proves, the value of aimed fire in combat. That is the story back of Colonel Sidney Hinds' crack-shot 41st Armored Infantry.

"It's A Rifleman's War..."

COLONEL SIDNEY HINDS, Commanding Officer of the 41st Armored Infantry Regiment of the Second Armored Division, slid his sniper rifle out of the peephole, took a beautifully gauged "Kentucky windage" on a crawling German an estimated 900 yards distant . . . and permanently wrecked the crawling Kraut's rear echelon!

(This is everyday business for Sniper Hinds. Despite his many responsibilities as CO, the Colonel manages to find time for frequent "possibles" on Heinie targets.)

. . . A supershot, you say, by a master marksman, using a special weapon. True. But rifle marksmanship is a required skill in all ranks in the 41st Armored Infantry. Colonel Sidney Hinds being what he is, his men learn to shoot, and hit, or else!

. . . The woods near Samree, Belgium, stank with dead Krauts as a rifle squad from "Easy" Company (of the 41st) prowled through it. Suddenly, fifteen Krauts "flushed" ahead of them and took off through the woods. The squad opened up, standing and blazing away with their M1s. But they weren't hitting much except trees.

Then the squad leader (who had been around the front lines quite a while and knew what an M1 could do, and how to make it do it) knelt and squeezed off three shots that made three good Krauts. . . . The other twelve stopped running and threw up their hands.

That shooting came from a soldier who had confidence in his weapon and in his ability to use it. What he knew, the other men in the squad would certainly learn later. They were new replacements who had joined the outfit only the night before. Two weeks later, those same men would have written a different story. For no man stays long in the 41st Armored without learning to shoot a rifle. That is one skill (among many) that Colonel Sidney Hinds, combatwise veteran of three campaigns, knows, practices, and teaches!

"This is essentially a rifleman's war," Colonel Hinds says. "Other services help take an objective, but it's up to the 'doggie' to hold it—and his principal means of holding it is by accurate, well-directed small-arms fire.

"The bulk of the infantry is armed with the M1—the best basic infantry weapon of any army in the world. With it he can lay down an accurate, unequalled fire power at individual enemy infantrymen. When a 'doggie' picks a Kraut in his sights, he gets that Kraut—if he knows his M1 and how to use it."

From his own competitive and combat experience and with the help of other men in his outfit who owe their lives to rifle mastery, Colonel Hinds developed the rifle-training program which is now in effect in the regiment; a program which has made the 41st Armored Infantry as "crack-shot" an outfit

as there is in the Army. The present program is a combat enlargement of the original plan developed by Colonel Hinds at Fort Benning, Georgia, and carried on in England, France, Belgium, and the German Reich.

"The purpose of the rifle program is simple," Colonel Hinds says. "We simply want every soldier to have enough confidence in his M1 to know that with it, used correctly, he can hold off any reasonable number of Jerries coming his way.

"The best way to do this is a combination of three things: He must learn to shoot on a target range—not on the front lines. He must understand that the basic fundamentals (position, squeezing, and aiming) are just as effective on the front lines as they are on the range at Benning. The 'bolo' there is the casualty here.

"The next thing is to develop confidence in the weapon by showing the soldier both the capabilities of his weapon and its limitations. Although the M1 is the finest rifle designed for the purpose to which it is put, it still has very definite limitations. It is as accurate as the Springfield '03 up to about 400 yards, but it loses accuracy slightly at longer ranges. However, the increased fire power of the weapon makes up for this slight deficiency."

Illustrating the point about the M1's fire power, Colonel Hinds cites an incident which won a Silver Star for a rifleman of "Charley" Company during the hectic days of battling around Geronsweiler, Germany.

"One of the squads made a successful attack on a strong point but was hit with a counterattack shortly after. About fifty fanatical Krauts were coming strong and coming fast. The squad had to move, and fast. One man volunteered to cover while the men moved. Armed only with his M1, he stood his ground, knocked off sixteen of the frenzied Krauts and stopped the rest cold! He did it with a hasty sling, a perfect prone position, a sweet M1, and a barrelful of guts!"

One of the prize pupils of the Colonel's rifle school is Pfc. Virgil Slover, of Harlan, Kentucky, now with "Fox" Company. Slover was distinguished in that he was one of the few guys who ever came out of Kentucky who couldn't hit a dime at 600 yards with a rifle bullet. They all laughed when he sat down to shoot—in England. But they didn't know what Colonel Hinds' school could do!

A few months later, in the middle of the Ardennes Bulge, Private Slover caught a Jerry patrol in his sights. Range—400 yards. Windage—Kentucky. Six shots . . . Score—five Krauts!

But the M1 isn't all beer and skittles. It is not a tommy gun, or a BAR; nor is it designed to be used on tanks or aircraft. Neither is it a sniper's rifle. For real sniping, you need a special weapon—and a special man!

Back in the States, at Fort Benning, some years ago, the "Brass" didn't have to look far to find the right officer to supervise the extra-special sniper training course. Colonel Hinds, who had spent a major part of his life up to that time "sniping" at all existing rifle records—and hitting many of them—was the man for the job. His methods were tried, found good—and, when the 41st Regiment established itself in Tunisia in 1942, sniper training was a regular part of the routine.

"The ideal sniper," Colonel Hinds says, "is a combination of eagle eyes, Joblike patience, Indian stealth, Solomon's wisdom, and rabbitlike agility. In addition, he's a superrifleman. Put 'em all together and you've got a damn good soldier!

"His function is comparatively simple. Equipped with an '03 with telescopic sights, his mission is to destroy specific targets—enemy officers and noncoms and the like—and to counter-snipe enemy snipers. As an added attraction, he is sometimes sent around the flanks to pick off Kraut machine-gun nests which are causing trouble.

"There are six snipers to an average rifle company. They are selected on the basis of the best shots in the company, and are then given an added five weeks of special training. In addition, selected officers and noncoms of the regiment are sniper-trained.

"The first phase of the training consists of shooting at known distances using the telescopic sight. After the first familiarization firing, the second and most important phase gets under way. The men learn to estimate ranges to hairlike accuracy.

"During this phase, the sniper estimates and estimates and estimates until he feels like a building contractor! He must have, also, a good picture of the bullet's trajectory at each range up to 900 yards. By doing this, the would-be sniper knows the amount he has to hold above or below the target at various ranges.

"After a few weeks of field training, the sniper trainee can hit a man at 600 yards with the first shot. But his training is only beginning. He must learn the value of patience.

"During his field training, he sometimes sits in a tree for periods ranging from a half hour to four hours, just sweating out a moving target. He never knows when the silhouette or any part of it will pop up. But he has got to be ready for it when it does. A few weeks of this and 'waiting' becomes second nature. It pays off, too.

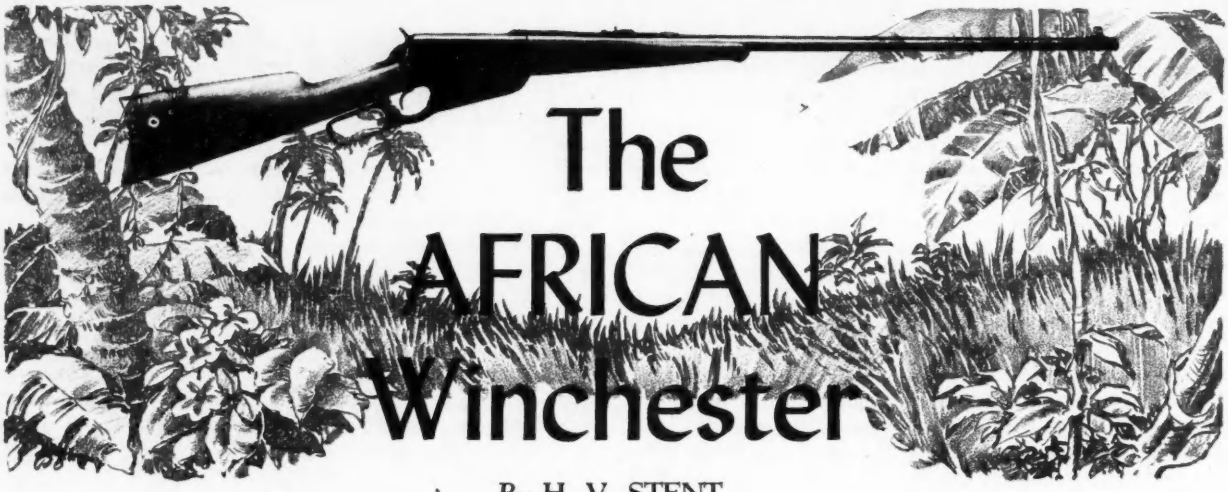
"The last phase of the sniper training is specialized cover and concealment.

"Before he can get his diploma, the sniper must be able to move into a firing position unseen. To accomplish this, he spends about a week crawling through bushes and woods and hedgerows and rubble.

"Although he is completely camouflaged, he has to watch his *derriere*. Other snipers are posted around the neighborhood and they have instructions to shoot—with live ammunition! All in fun, of course; but those bullets come close! Close enough so that actual battle conditions won't be a completely new and unnerving experience.

"Another and just as important point in the sniper training is for the sniper to be able to get back to his own position and to move around to another position without being seen by Jerry."

(Continued on page 27)



The AFRICAN Winchester

By H. V. STENT

THIS YEAR MARKS the golden anniversary of the Winchester Model '95—my candidate for the distinction of being the highest American development of the sporting rifle.

My first interest in this rifle dates from about 1926, when I first read the story of three American archers who, having bagged every kind of big game on this continent with bows and arrows, went to Africa to see what they could do on African lions. They killed seven with arrows alone. But they had to kill sixteen others with rifles in self-defense.

In order to get in an effective shot with their arrows, they had to be within seventy-five yards of the lion. Also, they had to work around to the side of the lion because the bony head of this beast is proof against anything but a bullet from a very powerful rifle. Frequently these maneuvers irritated the lion to the point of charging; and how they came!

On one such charge, Leslie Simson, guide and gunner for the party, put a bullet from his double-barreled .577 right below the left eye of an already-wounded lion. That 750-grain bullet ploughed right through the lion's body and came out at his left hip; but the lion showed so little effect of the shot that the other men thought Simson had missed! As the beast made his final spring, Simson shot him in the brain with his second barrel, then ducked aside. The lion, dead now, flashed through the air where, an instant before, Simson had been standing, and landed ten feet behind him.

That charge convinced Art Young, an expert rifleshot, that he, too, needed a rifle. He persuaded Simson to sell him his favorite small-bore lion gun, a .30-'06 Government Winchester. Wrote Young:

"This doubly pleased me because I again had my favorite old lever action to work. I used it until the backs of my fingers were sore from the quick, hard, and positive working of the lever. Eight charges in five days was our experience. One of these stopped twelve or fifteen feet from the car."

He told of dropping a lioness who was pursuing their car. The Winchester stopped her just eight feet from the tailboard. A buffalo charged him from sixty feet away—and dropped at seven paces under the impact of three of those .30-'06 bullets.

Those yarns impressed me pretty strongly with the merits of the Model 95 lever action. After all, if it were the favorite small-bore lion gun of a man like Simson who had shot 232 lions at that time, it was worth considering.

Queerly, the sporting magazines at that time did not speak well of it. Those were the days when most gun editors were strongly pro-Springfield, and lever-action arms were represented as being so inaccurate that they would not hit a deer at much over 100 yards, and so weak (because of their rear locking bolts) that a high-intensity cartridge like the .30-'06 made them positively unsafe. Funny, I thought, when Young had spoken so well of it!

Art Young wrote me bluntly that talk of the weakness of the lever action was a lot of bolt-action propaganda. Simson, he said, had worn out the barrels of two lever .30-'06's in Africa. The one he had sold Young was his third, and the barrel was nearly done on it, yet the action still functioned perfectly. Evidently it was strong enough to outlast the barrel. This, remember, was with Western 180-grain-at-2,720-f.s. and 220-grain-at-2,385-f.s. loads, as powerful as anything we have now.

Simson, who has been called the best game shot in Africa, wrote: "I learned to shoot with the old .44 Henry lever action . . . and I continued to use the lever action until a few years ago. I think it sufficiently accurate for game shooting in Africa, and found it reliable in action always."

"Sufficiently accurate for game shooting in Africa!" How accurate is that? Well, the average range on those eastern

Frequently these maneuvers irritated the lion to the point of charging. And how they came!

plains has been estimated as 265 yards. Simson wrote of camping for some time by a water hole where he regularly killed antelope at 400 yards—with one of those same lever-action Winchesters . . . And why not? Away back in 1896, when it was only "a yearlin'," the Model 95 won the famous thousand-yard Wimbledon Cup Match, shooting against the best rifles of its decade.*

"These facts convinced me of the weapon's accuracy—but what about its strength? There, too, I found plenty of favorable testimony. Townsend Whelen had written that the Model 95 would stand more pressure than the Springfield. Elsewhere, I found an account of a test between a Model 95 .30-'06 and a bolt-action rifle of the same caliber, pressures being steadily increased in both. Both stood far more than the pressure of standard loads. Finally, the lever action, having more spring to it than the front-locked bolt, gave a little and set back so that it would no longer fire. But it was perfectly safe, with the extra protection of its steel breech if the worst had happened. A slight further increase of pressure and the bolt action gave way—and when a bolt action does give, it really goes! The lugs break off, the bolt flies back, escaping gases rip through the thin wood and flimsy metal below. For my part, give me the 'weak' lever action which stops shooting before it explodes!"

I found, also, the records of another test by our own Army Ordnance Board. The first Model 95's had the straight-sided breech and slender one-piece lever of other Winchester lever-action arms; but, in 1898, there was some promise of its being adopted by the Army so Winchester introduced the two-piece lever which locked in the closed position, and remodeled the breech into the shape which was ever afterward characteristic of this model.

Here are some quotations from the Army Ordnance Board's report of 1899, rearranged for convenience but quoted verbatim:

"Test V—This test consists in firing ten lots of 500 consecutive rounds in about thirty minutes each, the gun being allowed to stand until cool between each 500 rounds, and to be used only as a magazine arm. . . .

"Test VIII—Defective cartridge. Two cartridges cross-filed through the rim were fired. . . .

"Test IX—Three cartridges, giving a powder pressure of 75,000 pounds per square inch were fired.

"The arm withstood these tests very satisfactorily. The enlargement of the chamber and of the head space by the excessive powder pressure was very slight."

No other American arm was as popular on heavy African game as was the hard-hitting, hard-kicking, swift-shooting .405 Model 95.* Roosevelt called it his "medicine gun" for lions. White took it to supplement the Springfield on all three of his trips. Martin Johnson relied on it to stop the charges of rhino, buffalo, and lion that he provoked in order to get close-ups for his wonderful moving pictures of African game. Many times, these three most dangerous species of big game in the world were stopped at fifty feet, at thirty feet, *at ten feet*, with the .405. In one of the most interesting of African hunting books, *Gorilla*, Ben Burbridge tells of three trips after African big game with two Model 95's, a .405, and a .30-40. They were his entire rifle battery.

If I were buying a rifle today exclusively for moose and grizzly, or Kodiak bear, I'd get a secondhand Winchester .405. Sure, I know the .375 is more powerful, longer-ranged, and also all the style. But I know that with the Winchester lever action I could get a second and third shot off, if necessary, in half the time that the bolt action would take. And don't try to kid me that the speed doesn't count, on game that keeps coming until it is knocked off its feet!

I've always had a hankering to use a .405 with the handload that Mattern once recommended: 54.5 grains of HiVel, I think it was, to give the 300-grain bullet a velocity of 2,350 f.s. That would mean a muzzle energy of 3,700 foot-pounds! If you should get a heavy enough (*Continued on page 25*)

* The following excerpts from THE RIFLEMAN's forefather, *Shooting and Fishing*, September, 1896, describe the Wimbledon Cup Match for that year:

"The weather was cloudy . . . with a strong wind at one o'clock, as unsteady as it is possible to be. . . . Arriving at the foot of the range, one finds all the aspirants for Wimbledon honors lined up at the firing point. . . . One is struck with the fact that we are among cranks of the first water. There is . . . the veteran pigeon shooter, Colin R. Wise, of Passaic, with the Krag-Jorgenson .30 caliber; Colonel Cecil Clay, of Washington, D. C., with his old Springfield; Lieutenant F. C. Wilson, of Georgia, with one of C. E. Overbaugh's Sharps-Borchardt Creedmoor .45-110 specials; Captain Stebbins, of New York, with one of the new Winchester-Lee .236 naval rifles; Captain J. C. Postell, of Georgia, with a Springfield military .45-70; Captain George T. Cann (the winner) with a new Winchester repeating military rifle Model of 1895, .30 caliber; Sergeant W. W. Cookson, District of Columbia, with a Remington Creedmoor .44-100 sporting; . . . etc."

Captain Cann's score for the thirty-shot match was 109 x 150; not impressive by comparison with more recent many-V possibles, but fairly comparable with them, since they were made possible by later cartridge developments and with the aid of telescopic sights, as against the iron sights of that day.

Nor should Captain Cann's score be taken as indicative of the potentialities of the rifle as of 1926, thirty years later, the period with which this article deals.—EDITOR.

* The 300-grain .405 cartridge developed 2,220 foot-seconds muzzle velocity, 3,285 foot-pounds muzzle energy. Its striking energy at 100 yards, 2,510 foot-pounds.—EDITOR.

RETRAINING the RETURNING G. I.

By COLONEL GEORGE O. VAN ORDEN, USMC*

BEFORE WE MAY JUDGE what should be done to retrain the GI to shoot safely, we must discover what we are to work with—what are the GI's aptitudes and attitudes in small arms, and how do they fit in with the requirements of safe field and target shooting? What is the extent of his technical knowledge and is it adequate to carry him unaided, yet safely, from the military rifle on the battlefield to the sporting arm in the field or the target arm on the range?

There is only one way to find out the answer: Go to the GI and try him out. This we have done. We have been in a position to observe approximately 5,000 returned veterans during a period of six months, and we have been able to get a fairly clear picture of what they want, what they think about, and how they feel about a number of things—sport with firearms among them.

The group we have tested are the Marines at Marine Barracks, Klamath Falls, Oregon—men who have been returned to the United States from overseas and who are being reconditioned, after bouts with malaria and filariasis, for further service. During the three to six months of a training program which restores 97 per cent of the men to a full-duty status, considerable attention is paid to familiarizing the lads with adult recreational activities, particularly those having therapeutic value through body building. These activities, occupying a considerable proportion of the weekly schedule, range from bowling, to horsemanship, to shooting. We believe that the group represents the average returned veteran and that, in the matter of our present inquiry, it is not unusual in any particular.

The weapons-training background of these Marines is similar to that prescribed for all infantrymen: Principles of Marksmanship right out of F.M. 21-5; demonstrations, perhaps, by the superb training films of the infantry on marksmanship, and the usual two to three weeks of target practice during recruit training. There are evidences, of course, of the greatest variations in efficiency and quality of basic instruction, just as in any outfit in war; but, full and by, from what we have observed in the field there is little difference today in weapons qualifications between the average Marine rifleman and the average GI rifleman. In any case, we can safely judge the one and be fairly certain that the results will not be far off in the judging of the other.

So, let us examine the Klamath Falls Marines BEFORE they have received instruction in "Sporting Arms" (a twelve-hour introduction to organized sports with firearms and field shooting), and see what they know and how they feel about firearms and sport.

This will, of course, throw us into a number of statistics, but the figures *are* interesting, and they *do* give us the answers we need. And to get a true picture we need hit but a few high spots.

For example, 65.6 per cent of these Marines say they *will* hunt game with a rifle of some type after the war; 18.6 per cent say *maybe* they will, and 15.8 per cent say definitely they will not.

How about bird hunters? We found that 60 per cent say they will hunt birds with a shotgun after the war (but only 23.6 per cent will go in for trapshooting, and 19.1 per cent are interested in skeet!).

Very few of these men hunted before the war. There are a lot of new hunters coming up—if they can get the equipment and a place to hunt.

We find that 81.3 per cent want to go into some form of organized competitive shooting (73.7 per cent of this group want to hunt bird and game, in addition to the target sports). Of all the men examined, 38.4 per cent are interested in and intend to get into small-bore rifle shooting, 35.3 per cent into service-rifle shooting. A fraction over 35 per cent say they'd like to shoot sporting rifles in matches, and about one-half of that group say they're not interested in the service rifle for match shooting. Most of the sporting-rifle enthusiasts also checked small-bore rifle as a sport in which they intended to participate. About one-half of the men interested in service-rifle competitions indicated no interest in any other shooting sport.

As to trapshooting, 23.6 per cent say they are going in for it, and 19.1 per cent (all included in the trap group) will shoot skeet. (But, remember, 60 per cent of all men examined will go bird hunting with shotguns.)

Only 3.2 per cent are interested in muzzle-loading rifles. But only about that percentage know anything at all about that sport.

The biggest attraction of all, in numbers interested, is pistol and revolver shooting—*46.4 per cent* want to get into that sport.

And, finally, 18.7 per cent are not interested in any form of target practice. (There are 34.4 per cent not interested in any form of hunting.)

These figures mean a lot to anyone experienced in target-practice promotion. They mean that hundreds of thousands, even millions, of men *want* to become shooters or hunters, be it with rifle, pistol, or shotgun. Whether they *do* actually be-

*A paper to be published in *The Transactions of the Tenth North American Wildlife Conference*, scheduled for release this fall.

Thousands of men will come back from the wars with a new interest in guns and shooting. But will those men be ready for the types of shooting they'll find on the rifle and pistol ranges, on the trap and skeet layouts, and in the hunting fields here at home? Colonel Van Orden, who is certainly qualified to answer this question, says, "No!" . . . and offers a possible solution to this impending problem.

come shooters and hunters depends on the availability of equipment, the accessibility of safe, clean, attractive shooting grounds, economics, and little else.

Supposing that conditions exist after the war that do permit and attract the GI to become a target shooter or a hunter?

What about his present technical knowledge of firearms? Is it adequate to permit him to take up a sporting arm and safely go on the range or into the field without further instruction?

Let's select a few representative questions, and see from the answers given what situation exists. For example, every man in the examined group has handled caliber .22 Long Rifle cartridges in boxes and fired this ammunition in preparatory training. But only 74.4 per cent said the .22 L. R. is dangerous up to a mile. About the same number remember the "Caution—Dangerous Within One Mile" printed on the flaps of the cartridge boxes, but one man said the .22 L. R. was dangerous up to 100 yards, and another said six miles. The majority who were in error said two miles. So, if there is any consolation in this ignorance, it is that the error in most cases is on the side of caution—and safety.

Nearly all the men examined were initially trained and armed with the U. S. Rifle, Cal. .30, M1903. Yet, when asked the caliber of the "U. S. Rifle, M1903 (commonly called the Springfield)," 55.4 per cent said, ".33 caliber," and 44.6 per cent said, ".30-30." The sins of the fathers, et cetera, plus the Shades of '18! However, they don't make that mistake with the M1 rifle—that one *is* ".30"—Dad never told 'em different.

Are they technically ready to go hunting? Well, 36.3 per cent say the carbine would be an efficient deer rifle; 56 per cent say definitely, "NO;" 7.7 per cent are undecided. Thus, if it is any consolation to the deer to be shot in days to come, Mr. Deer, without further public education on the subject, can figure on a two-out-of-three chance of getting shot dead quickly by a proper weapon and cartridge instead of being crippled or otherwise painfully fouled up by ones not suited to the job.

How about the degree of familiarity with the principles of markmanship of this great number of men who propose to take to the ranges and woods, gun in hand, looking for a day of sport? How much do they know?

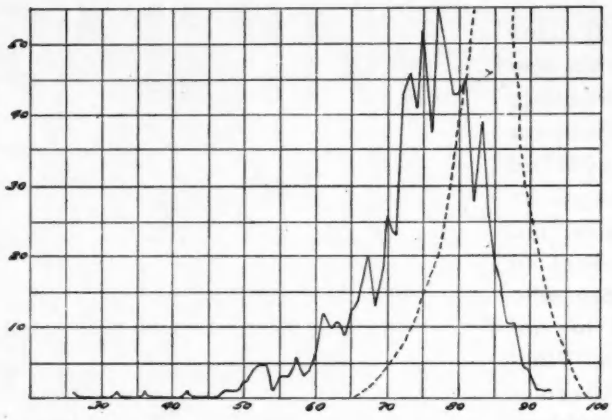
Many have had fundamental training with the pistol, but in general their skill is so poor that they would not stand up to the Class of Marksman in the NRA Classification System. Promoters should be prepared to start from scratch with that 46.4 per cent who will go to the pistol ranges.

Comparatively few have ever fired or even handled a shotgun, so those old-timers who go into the fields, or on the trap and skeet ranges, with the new shooters had better be prepared to hold a basic training class before they start—or else.

But the rifle picture is somewhat different. All the men examined had fired the rifle for qualification over a standard course. However, 19 per cent said they did not remember whether they were Experts, Sharpshooters, Marksmen, or Unqualified. Of the 81 per cent who said they did remember, half of them were wrong. The 81 per cent said they qualified

93.2 per cent—actually they qualified but 65 per cent. Of all men examined, 41 per cent rated themselves higher than the correct ratings shown in their service records. Some Unqualified men say they are Experts.

Even this means something: It brings out a frailty of man's nature—he usually thinks he's better than he really is. "A little learning is a dangerous thing!" To the rangemaster and the woodsman, this frame of mind is a danger signal. It means that there are tens of thousands of men going out to shoot who are so convinced they are Davy Crocketts that it will be hard to get them to take advice from anyone. Give people such as these five minutes with a loaded gun, and they may kill some innocent bystander in the next county!



Graph shows actual rifle skill of a representative group of returned GIs.

The actual collective skill of the group examined is shown by the solid line on the graph. (See above.) The solid line shows the scores of 824 returned veterans who fired at 200 yards Slow Fire in four positions on the Klamath Falls Range. The scores were recorded during the second firing of the course and following three hours of preparatory exercises.

For comparison with these scores, we prepared an "expectancy curve," or what we expected to get in scores during the test, based on our records of the scores of over a thousand men firing similar courses at Quantico during 1940. The lowest score of the Quantico group was 65 per cent, the highest 97 per cent. The average is shown by the dotted line on the graph.

From the difference between the prewar average and present-day scores, rifle promoters will see that there has been a considerable drop in the collective skill of military marksmen on the target range. Therefore, from among the new shooters we may expect mostly Marksmen, and but few Sharpshooters, according to NRA Registered-Competition standards, and the promoters should point their tournaments to interest the type of shooters who, a few years ago, were called dubs. Interest them, however, and hold them—and in a short time the Experts and Masters will blossom forth in a satisfactory profusion.

In review, from what we have determined through our tests of the returned veteran, there is little doubt that target and field sports stand on the threshold of a great expansion, a many-fold increase in the number of sportsmen on the ranges and in the fields.

These new men who will fill the ranks are fine fellows, enthusiastic and intelligent about the things they do. But, in general, while their military background prepares them to some extent for sports with firearms, their technical knowledge of weapons and their skill is *not* adequate for them safely to go shooting with target and/or sporting arms without further instruction.

It appears that the scope of training definitely required includes a course in the mechanics of the new firearm the GI will acquire, a refresher in the fundamentals of marksmanship, sufficient target practice on the range to insure development of an adequate skill, and an introduction to the game and conservation laws that will affect his activities.

Will the returned veteran be receptive to any sort of training program? The answer is definitely "Yes" if the program is presented in an attractive and practical way. In the first place, most veterans are *very* safety conscious. Secondly, the majority of them are well aware of their shortcomings and are willing to learn anything that will help them to do better the things they are interested in. They are well aware of the necessity for restrictive controls in the use of firearms and will abide by the laws—if they are told what they are. They are aware that shooting organizations exist, and are willing to support them. (For example, when asked what the initials, "NRA," stand for in connection with rifle and pistol shooting, 81 per cent answered, "National Rifle Association," although practically none had ever belonged to this organization.)

Because of this attitude on the part of the returned veteran, the picture is most encouraging, and, to our way of thinking, there is a practical way of correcting the bad spots in it.

We do not believe the retraining problem can be solved while the GI is in the service. The system of retraining which is proving successful at Klamath Falls is probably impractical at any other facility for the handling of returned veterans, there being no other such place where men of this category are assembled for a definite period of time under the conditions which exist at Klamath Falls.

We believe the problem can be solved successfully through the co-operation of the arms manufacturers, the national shooting organizations, the tournament promoters, (or shall we say the local club officials), and the local dealers. These are the agencies who can provide the instruction the GI needs to shoot safely, and this instruction can be accomplished if the situation we shall hereafter describe is brought about through the mutual efforts of these agencies.

The problem must be handled *after* the GI has returned to civilian life.

Whenever a sporting arm (which includes target and hunting rifles, shotguns, and most revolvers and pistols) is sold, let there be in the box with the arm, a set of colorful, well-prepared "home study" pamphlets.

The first, prepared by the arms manufacturer, should describe by word, picture, and drawing the mechanics of the weapon, so that the owner will be able to learn the functioning of his weapon and how properly to strip, to clean, and to assemble it. Let there be clear, sharp pictures of how to load and unload, and how to set the safety—no matter how simple these operations may be. Let there be a section in simple, graphical, and tabular form on the ammunition for this firearm; the suitable types of cartridges for it; the bullet and powder weights; the trajectories; the ranges up to which the ammunition is dangerous; the shock and penetrative powers, and a statement of the type of game, if any, which may be hunted humanely and safely with the cartridges under discussion. All of these

data are essential knowledge to make a man a *safe* shooter.

In addition to this, let there be a section (with pictures) on "sighting," showing the proper use of the sights provided with the firearm, together with a discussion of sight setting, and how to correct for range and deflection. Even fixed sights require detailed explanation.

Following in order, let there be sections which, by word, picture, and cartoon cover special features or characteristics of the firearm which may affect the application of other fundamentals of shooting, such as positions or trigger squeeze. For example, in the case of a straight-stock, prone-position target rifle, the text should explain the ramifications of shooting offhand with such a rifle—and why.

And, finally, let there be a section on safe firing procedures on the range and in the fields with *that* particular firearm.

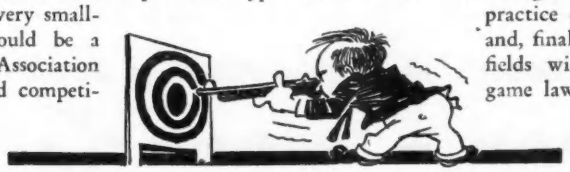
We place the responsibility for the production of this pamphlet, even though it includes special notes on marksmanship, on the arms manufacturer because, in the interest of safety, we do not consider the generalities of a general text on marksmanship adequate to cover all the peculiarities of different firearms. What we are advocating is a special text for each type of arm—that leaves absolutely nothing to chance or to possible future misunderstanding.

We do not want this pamphlet to be so technical and involved that the new owner will take a look and say, "My God, what do they want me to do—take a postgraduate course?"—and then chuck the book in the wastebasket. What we would like is a gay, colorful pamphlet full of good pictures and good dope—and with just enough detail to present the fundamentals clearly. There should be Sad Sack cartoons here and there throughout the pamphlet, driving home warnings of the silly things (funny in print but potentially deadly in practice) that people do with guns. The whole thing must be attractive enough to entice even the Davy Crocketts into reading it.

This is the type of training publication that has taken the GI by storm—and the returned veteran *will* read such a pamphlet when he finds it enclosed in the box with his new gun. Having read even this one pamphlet, and even if he does not read the others we will enclose in the box, *his* "safety factor" will go up many a point. At least, he now will have the technical knowledge necessary for him to be able to *handle* his new firearm safely, and he will know where, how, and under what conditions he may safely shoot it.

The second pamphlet to be found in the box should be a complete outline of the fundamentals of marksmanship, prepared by the national shooting organization concerned with the type of shooting done with the firearm in the box. For example, with every shotgun there will be complete information on how to shoot it accurately on the trap and skeet ranges, and in the field. Again, this pamphlet must not be so complex and long that it will scare away its intended reader.

The third pamphlet enclosed should present the advantages of organized shooting, and the fun that is at hand for the new gun owner. This pamphlet also should be prepared by the national shooting organization concerned with that particular type of firearm. For example, with every small-bore target rifle sold there should be a pamphlet by the National Rifle Association extolling the virtues of registered competitions, describing in detail how tournaments are conducted, and showing how easy it is to be a participant in the sport. (We presume, of course, that the day is nearly at hand when there will be competitive opportunities for every type of firearm, and that the .32-20 and the .250-3000 shooters will have suitable matches set up for them in sporting rifle tournaments—if only for the purpose of getting *every* gun owner into organized, competitive, target practice—paper targets, clay pigeons, or what have you.)



Why the pressure to get *every* gun owner into organized, competitive shooting? Because it is through organized, competitive, target practice that skill is developed; the skill which, coupled with technical knowledge, produces *safety*. I know of no other means as certain to effect that result.

With this pamphlet attracting every new owner to the target ranges, be it for target or hunting rifle matches, or for trap or skeet, or for a crack at the dancing bull's-eyes of the pistol course, the stage is now set for the returned GI to *teach himself* to shoot safely.

Our bet is that the GI will read every one of these pamphlets (if they have been prepared properly) and, having done so, will have taken the first and most important step toward *safe* shooting by having adequately prepared himself mentally.

It is now up to the promoters to do the rest—by providing opportunities for practice—practice through tournaments: Matches that are fun, that are fired on accessible, clean, safe, and attractive ranges; matches that are a test for the Masters, yet not a torment to the Marksman; matches based on slow, precise shooting, so that a newcomer can truly develop basic skill.

The finishing touch to all this is provided by the local dealer who, with the sale of every firearm that conceivably might be used for hunting, puts in the box with the other pamphlets a copy of the State Game Laws, and other notes on the "local ground rules" for field shooting. In addition to this, in the case of any firearm that he sells, it is also up to the dealer to place a card in the box inviting the attention of the buyer to the addresses of the local shooting organizations concerned with the type of firearm he has just bought.

With all this accomplished, and no less, we may expect the GI to shoot safely.

All this has been done before? No—not in a manner and to the extent we suggest. There is much to be accomplished in the production of satisfactory pamphlets and in the cooperation of the several interested agencies.

All this costs money? Yes—and a great deal of money. But it is money spent to make money. Better yet, it is money guaranteed to make money through the creation of good will and through the maintenance of good will because of a degree of safety built up among the new shooters that will prevent the expansion of shooting from being killed a-borning by stupid accidents on the ranges and in the fields.

Make the Home Study Training Pamphlets as much a part of every gun that is sold as are the sights and the trigger. Make the pamphlets as attractive as a polished-walnut stock, and so clear and simple that anyone who *can* read *will* read and understand them. Give the gun owner the will and the chance to practice on the range to develop his skill; and, finally, send him to the woods and the fields with a working knowledge of the game laws fresh in his mind. Only when we have done these jobs well, will we have retrained the GI to shoot safely. ◆ ◆ ◆

Theory of Shotgun Patterns

By NORMAN POWELL

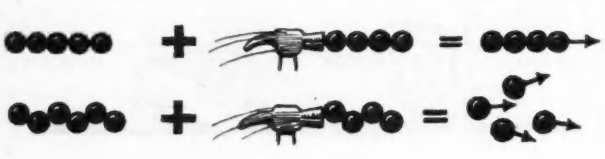
I KNOW OF NO SUBJECT more beclouded by misconceptions and controversy than that of shotgun patterns. I have yet to hear a complete and logical explanation of the basic causes of the dispersion of a load of shot, or the control and regulation of dispersion by means of what is commonly called choke.

We are told that there are two kinds of choke—mechanical and ballistic—and that ballistic choke means the actual patterns a gun will throw. We are told that we can put no dependence on mechanical choke, but must pattern our guns with different loads if we are to know its real or ballistic choke. We are also told that, in theory, each different load requires a different design of choke, and that we have too many different kinds of shotgun loads for any one mechanical choke to produce uniform patterns. In fact, we are told, and rightly, that a shotgun and its pattern is one of the great uncertainties of life!

Now, there are a lot of factors to blame for the inconsistency and variance of shotgun performance and patterns. We do not have the space nor time to consider all of them. For this reason, we will assume that we are dealing with the dispersion typical of average shotguns and average ammunition under normal weather conditions. What causes, happening in the bore of the gun during its discharge, produce the dispersion shown by different loads, different bore, and chokes of different designs and dimensions?

Many authorities place most of the blame for dispersion and bad shotgun patterns on deformed shot pellets, muzzle blast, and the pressure of the driving wad against the base of the shot column. I disagree. Even if we had shot so hard that it could not be deformed, and a gun with a hardened barrel to fire it from, while our patterns might be improved somewhat, we would *still* have dispersion. Muzzle blast and wad pressure do tend to scatter the load of shot; but the fact remains that, if we drill the barrel of a shotgun with a series of small holes a few inches from the muzzle, thus releasing the gas pressure before the load emerges, we will still have dispersion and will still have to control it by means of a choke. (This statement applies also to the Cutts-Comp and Weaver Choke with their pressure release ports.)

To locate the basic causes of dispersion, we must first understand what a load of shot really is: A hybrid between a fluid and a solid made up of many spherical missiles. With such a hybrid subject, we have to do some hybrid thinking. We have to deal, simultaneously, with the laws that govern fluids in motion and the laws governing spherical missiles. When we compare the choke of a shotgun with the nozzle of a hose, such a comparison holds good only to the extent of the relative fluidity of the load of shot we are using. At a certain point, we must stop using the laws of fluids in motion and apply the laws that govern the path of flight of spherical missiles. In this respect, we can lay down two basic laws that cause and effect the dispersion of a load of shot. These are: The Relative Fluidity of the Load of Shot, and The Angle of Contact Between the Shot Pellets.



First, we can define the fluidity of a load of shot as its ability to flow or move (taking into account the well-known rolling action of balls) from the case through the barrel and choke with a maximum ease and a minimum resistance from the wedging effect of the shot pellets and from locks and jams in the shot column. A good degree of fluidity also means that the bore friction of the load and its internal expanding mechanical pressure will be low. We are also safe in assuming that poor fluidity of a load of shot is the main cause of the deformation of shot pellets. We can, therefore, define Relative Fluidity as the basic cause of *variance* of dispersion, rather than as the basic cause of *dispersion*.

Now let us consider the main factors that affect the Relative Fluidity of a load of shot. When large shot is used, the relationship between the diameter of the shot pellet and the bore or choke of the gun determines Relative Fluidity. It is a well-known fact that large shot will not pattern well in small-gauge guns. (In some cases, very large buckshot may even jam and burst a barrel.) But this is more a case of bad relationship between shot and bore diameter than just the shot being big. When a favorable relationship exists between shot and bore diameter, large shot is more fluid than small shot. Small shot tends to pack into a denser, more nearly solid column than does large shot, and bore resistance and friction is greater in the case of small shot. More deformation occurs in a load of small shot than in a load of large shot. Knowing all this, we are safe in assuming that the more small shot we have in a load and the faster we move it, the greater will be the density of the shot column and the less will be the fluidity of the load. While quantity and velocity of a shot will affect the Relative Fluidity of large shot, too, the effect is more marked when small shot is used.

The reader should be able to see by now that, when we speed up a load of shot beyond a reasonable speed, the Relative Fluidity of the load will suffer and the patterns will be poor. When we take into consideration the combined effect of (1) relationship between the shot and bore diameter, (2) the weight and number of shot pellets in the load, and (3) their velocity on the fluidity of a load of shot, we can begin to realize what we are up against in respect to the variance of dispersion!

While the Relative Fluidity of a load of shot is a cause of

variance of dispersion, the angle of contact between the numerous shot pellets in a load is the basic cause of *dispersion*. The angle of contact between the shot pellets not only affects Relative Fluidity in respect to the wedging effect of the shot pellets, causing jams in the shot column, but it also predetermines the path of flight that a shot pellet can be expected to take if not diverted by some other force.

Applying the laws that affect the path of flight of spherical missiles, we find that, if a spherical missile is to take and continue on a path of flight that is parallel to the bore, the driving or propelling force must be applied squarely behind the missile at the instant it is about to emerge from the gun's muzzle.

Despite the fact we are a nation much given to playing games involving the use of spheres, our experts who write about shotgun patterns and choke action never seem to take this Law of Angular Pellet Contact into account. Take, for instance, the well-known rapid dispersion of the shotgun without a choke (commonly called a cylinder-bored gun). Even some of our loading companies blame this rapid dispersion on muzzle blast and the pressure of the driving wad against the base of the shot column. They forget the fact that a load of shot, after leaving the case, will tend to arrange itself in the barrel in a compact cylindric column made up of successive layers. The evenness of those layers depends upon a certain relationship between the diameter of the shot pellets and the diameter of the bore of the gun. This is known as chambering, and the Relative Fluidity of the load of shot permits a more or less even layer-upon-layer formation to take place. When shot pellets arrange themselves in successive layers in the bore of a shotgun, the first layer (the layer nearest the propelling charge) is propelled by the driving wad, and each successive

—Photo by Ewing Galloway, N. Y.

layer propels the layer before it. But the pellets, compressed as they are by the propellant gases, arrange themselves directly behind each other. Instead, each alternate shot pellet is displaced off center one-half its diameter in respect to the shot pellet before it. Thus, the shot pellets of the driving and driven layers make *angular* contact with each other.

This angular contact between driving and driven pellets does two things. First, it tends to set up an expanding pressure in the shot column. Second, it causes the shot pellets to take an angular path of flight in respect to the bore of the gun. Hence dispersion.

The possibility exists that, if each driving pellet could be kept directly behind each driven pellet, we would need no choke at all. Knowing that this condition of angular contact between the driving and driven shot pellets in a cylinder bore must exist, we can expect nothing but rapid dispersion.

To overcome the rapid dispersion of the cylinder-bored shotgun, we use what is called a choke. This is simply a taper cone plus a short true cylinder which starts at the small end of the taper cone and ends at the gun's muzzle. While shotgun manufacturers use a more or less standard dimension in respect to the bore of a shotgun behind the choke, they have no standard dimensions for the choke itself. Some shotguns have a taper cone that is about four and one-half inches long; others may have a cone only one-inch long. Variations exist also in the length of the short cylinder beyond the choke, extending from the end of the choke taper to the muzzle. Any changes in the bore diameter or length of this cylinder affect the patterns a gun will throw.

Now, let's see how a choke may be expected to affect a load of shot and control its dispersion. Knowing that the bore of a shotgun behind the choke is cylinder bored, we can expect the load of shot before it reaches the choke to be in a typical cylinder-bore formation; that is, a more or less cylindrical column made up of layers, the shot pellets making angular contact with each other. The shot pellets in this cylindrical column are inert except for their normal forward velocity and possibly some rolling action of the pellets making contact with the bore.

The shot column, moving at a high speed, meets and enters the large end of the choke's taper cone with a considerable initial impact, the magnitude of this impact depending upon the Relative Fluidity of the load of shot and the abruptness of the angle of the taper cone. (Actual deformation of the shot pellets is controlled by these factors.) This impact breaks up the layer formations previously existing and constricts the layers inward. While the load of shot moves through the choke's taper cone and this inward constriction is in progress, the angular contact between the driving and driven shot pellets is constantly changing. At some certain stage of this constrictive action of the taper cone, some considerable number of the driving and driven shot pellets are directly behind each other, or their angular contact is slight. At this stage, the constrictive action of the choke has gone far enough and the load must be released before less favorable angles of pellet contact take place.

The shot pellets are in violent angular motion during their passage through the taper cone, and a considerable internal expanding pressure is set up within the shot column. If rapid dispersion is to be avoided, the load cannot be released from the gun until both internal pressure and angular motion have subsided. It is at this highly critical time, when internal pressure and angular motion have passed their peak, and when the least angular contact exists between the driving and driven shot pellets, that we should release the load from the gun's muzzle to secure the maximum pattern density. To delay the emerging of the load of shot until the proper time is the function of the short cylinder that starts at the small end of the taper cone and ends at the muzzle. This is a timing device, pure and simple.

But different loads vary in velocity and in the size, number, and weight of the shot pellets. Therefore, each different load would, in theory at least, require a different time of release. I believe this is what well-informed writers mean when they tell us that a load must be balanced against the choke to obtain a good pattern. They mean that there should be a close

correlation between a minimum of expanding pressure inside the shot load, a minimum of angular pellet movement, and a minimum of angular contact between the driving and driven shot pellets at the instant the load of shot emerges from the gun's muzzle.

This condition can exist but for a fleeting instant if the short cylinder leading from the cone's end to the muzzle is too long. Traveling once again in a cylinder, the load of shot will start to rearrange itself in cylinder-bore formation. Angular contact will be resumed, and open patterns will result. Open patterns will result, too, from a too-early release of the shot load. If the cylinder in front of the choke is too short, internal pressure and angular pellet movement will still exist and will scatter the load.

The factor of Relative Fluidity applies to a load of shot not only in passing through the choke's taper cone, but its short cylinder at the muzzle as well. When we consider that, in the case of a 12 gauge shotgun, a constriction of only slightly more than one thirty-second of an inch accounts for all degrees of pattern density, we can begin to understand how a relatively small change in the dimension of the choke can have a great effect on patterns. When we take into consideration all the variables that can affect the patterns of a shotgun, we can see why there is little relationship between mechanical and ballistic choke, and why, as Major Askins keeps reminding us, we have too many loads to contend with!

Constriction, of itself, does not increase the density of a shotgun's pattern. It is only a means of imparting an angular motion to a load of shot to obtain a favorable condition of contact between the driving and driven shot pellets at the instant they emerge. A secondary result of choke action is to break up balled shot-cluster jams and locks that cause the patchy patterns typical of the cylinder-bored gun, and to increase the velocity of many of the shot pellets due to constrictive action of a choke. In this respect, a choke does act like the nozzle of a hose.

The question keeps coming up as to whether reducing the over-all length of a shotgun's barrel will improve patterns. If the gun is a true cylinder bore, little harm can be done to velocity or pattern if the barrel is not made too short; say twenty-four inches minimum for a 12 gauge gun. If, however, the gun has the least vestige of a choke, any reduction of the over-all length of its barrel will affect pattern density. In some cases, by judicious shortening, a little at a time, more open patterns may be secured. In some cases, when the short cylinder at the muzzle of a full-choked gun is nearly all removed, the gun may throw patterns as open as an improved cylinder bore. But all such alterations are strictly "cut and try," and may easily necessitate, in the bitter end, the purchase of a new barrel.

One shooter asks about opening up a choke with a reamer. Now, unless his reamer has some sort of a pilot to keep it concentric with the barrel and with the choke's taper cone, he will be more apt to spoil his barrel than to improve it. In theory, we might expect less pattern density and better distribution to result from opening up the bore of a shotgun at the muzzle. At some point in this opening-up process, this would be the case, at least with certain loads. But, unless a shooter keeps feeling his way by means of continuous pattern tests, he may never know when he has hit this certain point.

As I have pointed out, it is the relationship between velocity, quantity, and size of shot with the bore of the gun that determines Relative Fluidity. What we must do is to establish a favorable shot-and-bore relationship, regardless of what the bore or choke diameter may be.

The whole question of shotgun patterns is a relationship between the load and the bore of the gun, and choke that permits the greatest fluidity of the load and the most favorable condition of angular contact between the shot pellets. This Major Askins aptly defines as "balancing the load to the gun."

The automobile engine has an automatic spark control that takes into account changes in the velocity of the pistons and which can be adjusted to certain kinds of fuel. To be perfect, a choke should be similarly automatic in adjusting itself to ammunition changes. But, since an automatic choke would seem to be about the most impossible of all fantastic inventions, our only hope in the interest of better uniformity of shotgun performance would seem to be the standardization of the design and dimensions of choke by all our gun makers, and the elimination of a lot of different loads we could well do without.

The actual dimensions of the shotgun's bore and of the shot pellets used are hang-overs from the old muzzle-loading days. A change of a few thousands of an inch, one way or another, in the diameter of some of our shot would probably make a whale of a difference in improving patterns.

In summing up, I hope I have made the mechanics of a choke clear. Actually a choke is misnamed, for strangulation does not account for choke action. The conventional design of choke (as described in this article) uses a taper cone and a constriction to obtain the so-called choke action. On the other hand, the "jug" or recess choke *expands* the diameter of the shot load and then returns it to the original diameter. Any change in the diameter and contour of a shotgun's bore that will cause the shot pellets to move, thereby reducing or eliminating the angular contact between the driving and driven pellets, will act as a choke *if the change in contour is located the proper distance from the muzzle so that the load is released from the gun at the proper time.*

Variation in pattern density and uniformity from shot to shot is largely a matter of poor fluidity of the load of shot that prevents duplication of the arrangement of the shot pellets just before they emerge. A leaded or neglected shotgun bore naturally contributes to the poor fluidity of a load of shot and therefore greatly affects the density of shotgun patterns. ◆ ◆ ◆

"Aw, stop worryin', yuh dope. I ain't gonna tell Sergeant MacTavish that you wasted a whole clip to get only five Japs!"

Here is a pistol tailor made to fit one man's needs and notions. You may not like its looks, but you'll have to admit that rifle-type, easily adjustable micrometer sights on a pistol might well be worth having in cold weather match competition—and elsewhere!

—Photo by Dr. T. E. Jordan

TAILOR-MADE PISTOL

By L. A. BENTON

AL MARCIANTE HAS BEEN BUILDING and repairing guns and listening to shooters' alibis for over fifteen years, so he was not too much impressed by the fact that my Model E Hi-Standard "wouldn't shoot." He removed the slide and looked through the barrel. Then he cleaned the barrel and looked some more. "Chamber looks bad," he said. "Let's make a cast and see."

The cast brought some peculiar conditions to light. The rifling was almost gone for the first eighth of an inch, while for a quarter of an inch ahead of the case a ring .008 inch deep had been eroded in the chamber. The diameter had increased about .010 inch at the rear. This meant that the bullet, at the time of firing, was in free air and that gas could easily by-pass while it was moving forward—unless it upset enough to fill the ring. The latter condition was not desirable either, as the deformation could be severe.

Al observed that perhaps a new barrel would be in order. This suited me fine! I had long wanted to build a .22 auto that would have adjustable sights and a short, heavy barrel, but had never been able to bring myself to break up a good-shooting gun to do it. But I could dream, and now I had the excuse to make my dream come true. I unrolled a drawing of the proposed beauty.

Al looked shocked. "Gad Almighty, man! Do you really want to shoot a monstrosity like that?" And then, without waiting for a reply he added: "And, if so, *why*?"

I told him that I was doggone tired of going to matches and fussing around with cold fingers and a small screw driver trying to get a point or so of windage. What I wanted," I said, "was sights with handles big enough to turn with gloves on." It would be a further advantage, I explained, to have the sight mounted on the frame, thus eliminating any misalignment caused by the loose-fitting slide. And, since I can't see across a card table with my glasses off, I wanted a sight notch about an eighth of an inch wide by an eighth of an inch deep.

I had the future barrel in my pocket: a five-inch section from the south end of a six-groove Diller that, in the form of a Bull Pup Varminter, shot one-and-three-quarter-inch groups at 200 yards.

We had several chambering reamers to choose from, but they were all for target rifles. None of them had enough taper to insure good extraction. The first problem, therefore, was a new reamer.

There were some Stentor blanks on hand, already centered, with the drive shank finished, so it didn't take too long to rough-turn and mill the six flutes. I ran the heat treating to let Al go on with more profitable work. I set the gas furnace a little lean, letting it come up to between 1,450 and 1,500 degrees Fahrenheit. Just before hanging the reamer in the furnace I cut the temperature a little and checked with a pine splinter to be sure the atmosphere was just on the oxidizing side. We found that fifteen minutes was about the right heating time to give the desired 1,400 degrees. Temperatures were determined by color.

The reamer was drawn by holding it for a half hour at 350 degrees Fahrenheit in a gallon oil bath heated on top of the furnace. This temperature was accurately held within two or three degrees, using a high-range distillation thermometer. We used Sunoco S. A. E. 40 in the bath because it seems to retain its original characteristics best.

The finishing did not take long, as Al leaves only three or four thousandths to clean up. The chamber was 0.720 inch long and tapered from 0.225 inch at the forward bullet band to 0.2275 at the back of the case. A pilot about half an inch long was ground to 0.2175 inch. The flutes were then relieved with an oilstone, and we were ready for business. This gave us a chamber that was rather tight but, we hoped, would give no extraction trouble since the reamer made an excellent finish.

After chambering and slotting for the extractor, the barrel was set up in the shaper and a flat cut was made that brought it down to the top of the receiver. A sight was left that was the exact width and height above the bore as the original. This would permit the gun to be used with the standard rear sight—just in case. The ramp sight, shown in the illustration, is hollowed out to fit over this narrower sight. A medium-coarse checkering file was used to break up the reflective powers of the flat on the barrel. The whole was then blued in Houghton's bluing salt. The color exactly matched the receiver.

The Lyman 48 was a Springfield receiver sight that had seen better days. The base was milled off and a filler block was made to set the staff out from the slide. The peep socket was replaced with an open sight. A new windage screw had to be made, since Lyman uses Whitworth threads and we had only USS available in the size.

The job was complete, we thought. Now to try it. I eagerly reached for the gun—and found that *somebody* had forgotten something. I couldn't get it in my hand because the sight staff hung down so far. But that didn't bother Al. He just cut it off, making a new bottom bearing for the elevation screw. I could now hold it without feeling the sight at all.

The shooting was interesting. I can assure you that it was a pleasure to move the group around by a simple twist of a knob. This gives the pistol owner all the pleasures of shooting a rifle without having to roll in the dirt. And the score—well, I got a 97 *once* on the twenty-yard Slow-Fire target; but the sight doesn't stop my habit of jerking two out of ten. The gun is fine but there is still a lot of white around that black! ◆ ◆ ◆

BOTH EYES OPEN

By DR. MILTON M. IDZAL

MY FRIEND HARRY squints one eye when aiming. Jerry goes further and closes his left optic tight as a drum. But Jake—ah, Jake is one of the elect! He shoots with both eyes wide open.

So—what? What can Jake do with a gun that Harry or Jerry can't do? There's only one rear sight, isn't there? Just what advantage is there to keeping that left eye open if you're not going to use it anyway? Incidentally, how can you keep from using it without pulling the lids together?

Jake does have some advantages. Most experienced shooters, whether at game or targets, are probably fairly familiar with them. First, Jake has a wider field of vision. This is particularly useful in shotgun work. Even if you are not using that "off" eye for aiming, you can still detect the motion of a bird coming from what otherwise would be your blind side. Although that eye doesn't register *detail*, it will still register *motion*. Thus, you have a wider peripheral field of view than if you had one eye closed. That is a safety factor as well as an aid to more game in the bag.

Second, it is infinitely less fatiguing to leave both eyes open than to screw up the muscles on one side of the face in order to keep one eye closed. Experienced men say that in getting off a string of forty or fifty shots, in target work especially, the difference is amazing.

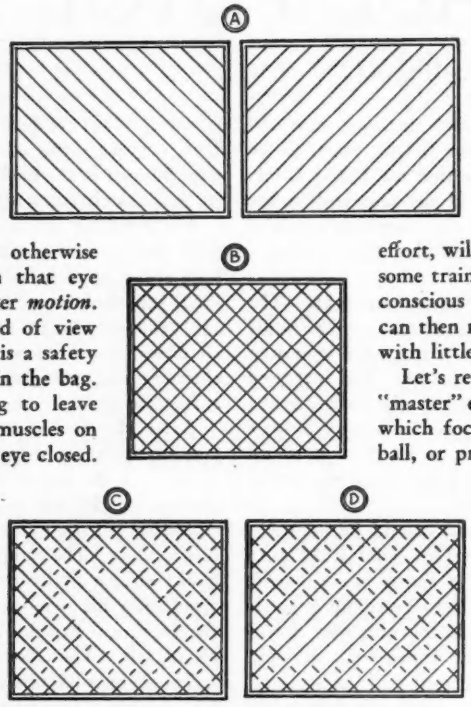
Fatigue itself is a peculiar thing. If your feet get tired, your arms, neck, back, even your eyes also get tired. The scientists seem to have proved that this type of fatigue is all in your head. They can prove that the muscles themselves do not tire. Nevertheless, if you tire your facial muscles, the fatigue will be reflected sympathetically in your arms and body. The eyes are unique in that they are the only organized bodily function requiring finely co-ordinated action of both the sympathetic and the central nervous system.

In brief, this open-eyed shooting is just one more way to achieve that relaxed posture so necessary to successful gun work.

A third reason on the side of two-eyed shooting is the fact that simply squeezing one eye shut actually affects the visual acuity of the other, or aiming, eye.

Convinced, as we should be by now, of the advantages of two-eyed shooting, the next question is: How to do it? How is it possible to keep both eyes open and yet keep the sights, the target, and the eye (or eyes) aligned?

An old truism contains a hint: "There are none so blind as those who will not see." That's it. You simply *will* not to see with the nonaiming eye.



If you could see both of the diagrams in Figure A at the same time, you'd expect to see a combination of the two, like Figure B. But your eyes are funny. What you'd actually see would be more like C or D.

Being a normal, two-eyed individual, you're accustomed to making use of both your visual organs. But if you would shoot with both eyes open—assuming you wish to see only one image of each sight and the target—you must prevent the image which passes through the lens of the "off" eye from registering on the film of that part of your brain which registers sight.

Perhaps you're lucky. You may have a sighting eye so dominant over the other one that you do this naturally when lining up two or three objects (like rifle sights). Many people do. But if you're not so fortunate, you'll have to learn to throw a road block across the path of the image you want to eliminate. At first, this will require effort, will power, and/or mechanical help. After some training—but not too much—good old Subconscious will take care of it automatically. You can then relax and shoot with both eyes wide open with little or no conscious effort.

Let's return for a moment to that dominant or "master" eye, as the shooter calls it. That's the eye which focuses on the target, be it bull's-eye, golf ball, or pretty girl. Your master eye pilots your vision. The other eye is the "co-pilot."

Usually, the master eye is the right eye for a right-handed individual and the left eye for a left-handed person. But not always. Sometimes, the eye with the keener vision wins out. Check yourself this simple way. Take a piece of cardboard about the size of this page. Punch a hole in it about a quarter of an inch in diameter. (Don't be fussy; just poke a pencil through it.) Hold the card at arm's length before your face and, leaving *both* eyes open, sight through the hole at any light or target. Now close one eye. If you can't see it, start the experiment again with a two-eyed "aim" and this time close the other eye. The eye with which you see the aiming point through the hole as you did when you looked at it with both eyes open, is your master eye. You subconsciously select it.

If you shoot right-handed, it's mighty convenient to have the right eye as boss. With the handgun, either eye *can* be used; but with the shoulder guns your chin and jaw just won't allow a right-hander to get the left eye directly back of the sights. So, if your master eye is in the wrong side of your head, you'll have to hold a new election—break in a new "master" on the other side. Either that or give in and squint that "off" eye closed so there's no interference.

But you *can* learn. The eyes and the seeing system are a flexible, adaptable set of organs. Haven't you ever wondered how cross-eyed people avoid seeing two of everything and bumping into telephone poles? When cross-eyed persons first become cross-eyed they *do* see everthing double. It becomes a prime necessity for them to suspend vision in one eye as a matter of self-preservation. They usually select the keener eye to see with. After the cause of the deviation is found and corrected, the individual can relearn to use both eyes again by special training.

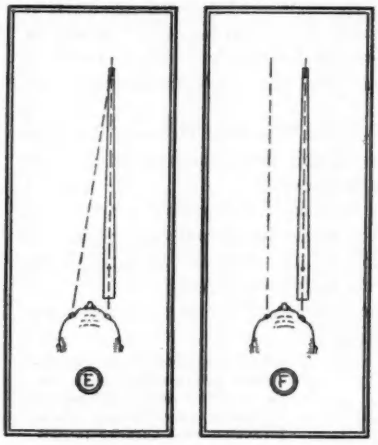
In other words, if you ***had*** to learn to shoot with both eyes open, or get killed—you would very, very quickly learn!

Watchmakers, microscopists, telescopists all do this. These boys always leave both eyes open while looking into their one-eyed instruments. If they didn't, the fatigue of screwing up the facial muscles to keep one eye closed would make long hours of work impossible. You can accomplish wonders with the ability of the eyes by practice and training. An old watchmaker, who had thoroughly mastered the art of ignoring the eye he wasn't using through his little magnifying loupe, used to entertain us by first looking at the floor and then looking up at our faces. His aiming eye would come right up and look at us, while the other eye would slowly come up from the floor, joining the first eye about ten seconds later.

But no such extreme development of eye control is necessary for two-eyed shooting. Most people can learn the required degree of control quite easily. Try it with a pistol first. Aim first as you have always done, with one eye shut. Continue to aim and—slowly—open the closed eye. You'll find that your sight picture will remain clear for a little while—will then dissolve, and you'll be looking "across the fields and far away." So—do it again. Each time you practice, you'll find that the sight picture will stay clear a little longer than it did at first—will dissolve more slowly.

You'll have some bad moments. Your eyes are used to doing things their own way, sharing the work according to a system they've worked out for themselves. They resist change. Fellows in my profession call that "retinal rivalry," and it's one of the little natural things we have to combat in this training. Sometimes even "master" shooters, long accustomed to shooting with both eyes open, have to squint one eye a little now and then, briefly, to clarify the focus—actually, to remind the eyes to do their job the *new* way, not the old. But it can be licked. Sooner or later, depending on how "stubborn" your eyes are, you'll be able to see your sight picture clearly with both eyes open, without having to start with one eye closed. When that point is reached, you're a two-eyed shooter.

Now, take a look at Figure E. We have to avoid having the eyes converging on the front sight. Look at F. This is the correct way, consciously attempting to allow the left eye to look straight ahead.

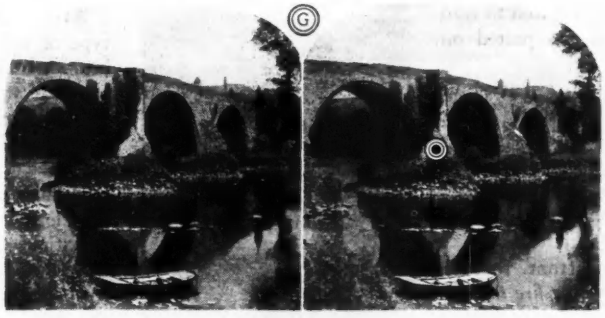


This is wrong. This is right.

Or take a stereoscope. Sure, the same kind Grandma had forty years ago with the double pictures to place in the holder. Don't have one? Probably Grandma's is still up in the attic. If not, a new one can be purchased from an optical supply house for about $5.00, probably with a few scenic pictures included. (Get a couple of these pictures; we'll use them later.) For our first purpose, instead of these scenes, we will use a stereograph like A. The right eye sees one set of slanting lines and the left eye sees the other set of lines running at a 90-degree angle.

If these lines are superimposed in your brain fusion centers as one would expect with both eyes, open, the resultant picture you should see would look like B. Sorry! It just doesn't work that way. What you actually get is a moment with the left-eye lines dominant (C), followed by a switch to the right-eye picture dominant (D). What you see keeps switching back and forth at the rate of from fifteen to thirty times a minute from C to D, but it is never like B. The job is to make the picture before the aiming eye (D) stick and endeavor to ignore the other.

Now, take one of the scenic pictures that came with your stereoscope. In the center of the right-hand picture paste a little round bull's-eye on white paper about a quarter of an inch in diameter (G). Simply put this picture in your stereoscope and ***aim*** at it. As long as you can see the white target, you are shooting with both eyes open.



Put this in your stereoscope and aim at it. As long as you can see the white target, you can be sure you're shooting with both eyes open.

Let's take our gun outdoors to the range where we can follow the method of Captain Spencer Lanning of the Sioux City, Iowa, Police Department. Lanning trains his own men by covering the nonaiming eye with a black celluloid patch and letting them shoot a few weeks with this on. Then he changes the patch for one with several pinholes in it that lets in just a little scattered light. This is followed by another patch with more holes in it. And finally the eye is completely uncovered—the training completed.

After you do train yourself—remember this—aiming and shooting is in itself still a one-eyed act. You are still using only the aiming eye even though the other eye is open. You have learned to block the impression from that "off" eye.

And now, lest someone write in and prove that he actually aims with *both* eyes, I will admit that there really was a man who did that very thing. He was nearsighted in one eye and farsighted in the other. He could see his front bead perfectly with his right eye, and he could see the target clearly with his left. By superimposing his image of the bead on his image of the target, he did great work.

But that was a freak case. You'll do well to stick to more simple methods. ♦ ♦ ♦

House of Horrors

By LT. COL. REX APPLEGATE

ALTHOUGH WE PRIDE OURSELVES on being a nation of gun lovers, many soldiers (and law enforcement officers, as well) consider their training with weapons on a very impersonal plane. This attitude suffers a marked change whenever these men are subjected to enemy fire—but that is often too late.

For psychological, as well as practical reasons, training on realistic combat-simulating ranges is particularly beneficial. Such training arouses the shooter's interest by interjecting (unmistakably and forcefully) the element of personal self-interest. Show a man how completely his lease on life may depend on his ability to use his weapon—show him that he *can* use that weapon effectively under combat conditions —and you will compel his interest and, at the same time, develop his confidence in himself, in his ability, and in his weapon.

This practical handgun range, locally known as the "House of Horrors," has been in operation during the past two years. During this time, hundreds of shooters of all degrees of training and experience have fired over it.

The basic floor plan shown is as it is simply because of the original construction of the basement used. The floor is dirt and the original rock walls and pillars are covered by six inches of dirt held in by a wooden form made of two-inch planks. (The weapon used in this particular range is the Colt Service Ace.)

The shooter is accompanied by an instructor who guides him through the course and makes commendations or corrections during the various shooting sequences immediately after they occur.

Let's follow a shooter. First, the student is brought into a small room at the head of the stairs. He is seated in a chair and left alone in this room which has dim lighting. He is given a knife and a sheath to strap on, and is told to read the following instructions which are posted on the wall:

"You are equipped with a pistol, twenty-four rounds of ammunition, and a fighting knife. Upon these weapons your life depends as you go down into the darkness. Below are twelve of our enemies awaiting you as you make your way along. You will fire at these enemies in *bursts of two shots*. You will use your knife at appropriate times.

"You will fire directly to your front, to your left, or to your right. *You will never fire to your rear.* A coach will follow immediately behind you to act as your guide and confessor.

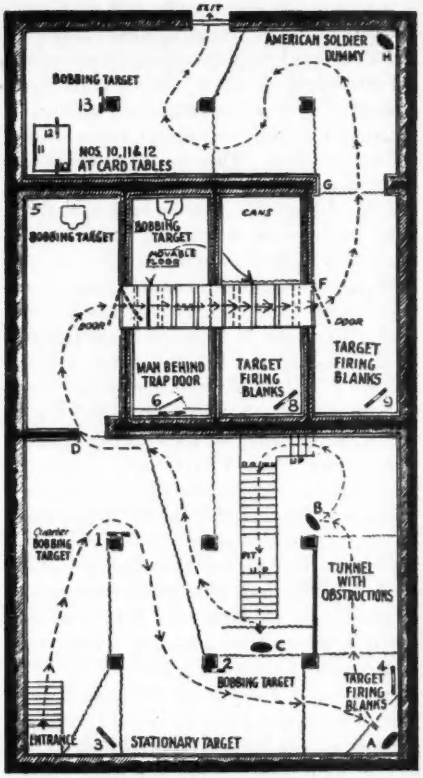
"Are you one of the quick or one of the dead?

"There are no booby traps, collapsible stairs, or trick devices in the darkness below. *Just Japs and Germans who shoot back!*

"If you come out alive, please tell no one else the details of what you have been through."

(A word of caution here: The tendency to use booby traps, false floors, and other trick devices such as are found in a carnival "fun house" should be avoided. These trick devices can defeat the purpose of such a range, which is to develop and test the individual's shooting ability.)

While he is reading the instructions, the student is subjected to several record sequences (broken English) of typical German (or Japanese) propaganda newscasts. In this range, extracts from the *Firebird Suite* by Stravinsky are also used.



Advancing through eerie, dimly lighted surroundings, amid the din of battle noises and nerve-tightening sound effects, these pistolmen meet surprise targets that literally return the fire. *Below:* Col. Rex Applegate in the ready position he teaches.

After not less than five minutes of this type of indoctrination, the shooter is called into an annex at the head of the stairs, given his pistol and three magazines of ammunition (eight rounds per magazine). The instructor tells him to insert one magazine and place the other two where he can get to them in a hurry. He is then asked if he has any questions. If so, additional last-minute instructions are given. When he is ready, he is told to pull back the slide, loading his weapon, and then to proceed cautiously down the steps, the instructor following immediately behind him with one hand in contact with the shooter.

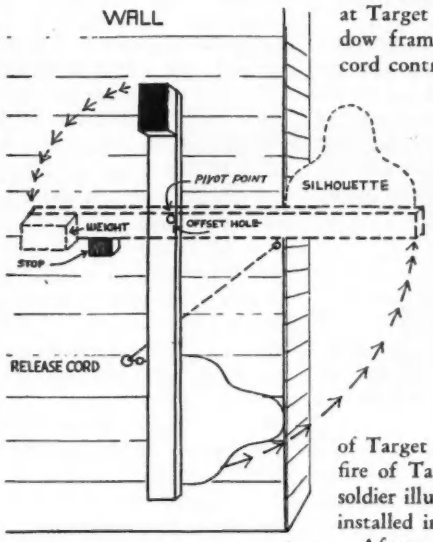
The instructor, aside from acting as a guide and making "on-the-spot" corrections, trips all targets at the appropriate times. For obvious safety reasons, the instructor maintains contact with the shooter (usually one hand hooked into the back of his belt) at all times when he is carrying his pistol. He stays out of reach when the knife is used and on those occasions when the student is in complete darkness.

As the shooter descends the steps, a record sequence (Stravinsky) is started which is interspersed by shots and screams. When he reaches the bottom of the stairs, the coach pulls Target No. 1—a bobbing target concealed behind a pillar and illuminated by a red light.

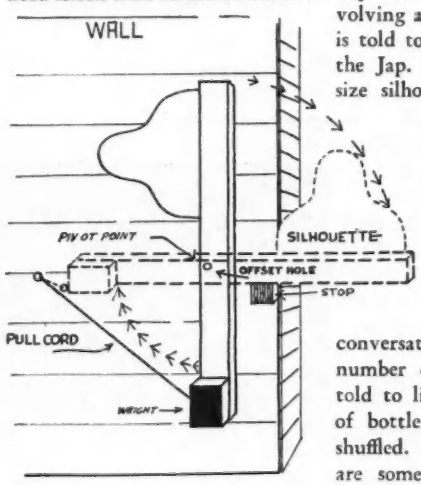
After firing, shooter and instructor continue around Target No. 1 to Target No. 2, which is also a dimly illuminated quarter-size silhouette target, popping out at eye level from behind another pillar. Target No. 3 is a half-size stationary silhouette, exposed by pulling aside a curtain. This target is illuminated by a dim green light.

Target No. 4 is next encountered and is concealed behind a curtain. This dimly illuminated full silhouette is exposed when another curtain is pulled. A blank-firing revolver, placed in the center of the target, fires in conjunction with the opening of the curtain.

At this point, the shooter's gun should be empty if he has fired the required bursts of two at each target. In any event, the gun is taken from him by the instructor and he is told to proceed alone through the tunnel, using his knife at appropriate times. Just as he is about to go down to his knees to enter the tunnel, the instructor exposes Dummy A which is constructed of old fatigue clothes and excelsior, and the shooter uses his knife upon it.



These surprise targets are foolproof and easy to make. The counterbalancing weight and off-center pivot make for smooth, easy operation. Weight on target above swings silhouette into view when cord is pulled. On target below, cord pulls target down, weight swings it up. Awning pulleys and cords make best release devices; plywood cutouts make durable silhouettes.



While he has been proceeding from Target 1 to Target 4, a Gestapo torture-scene record sequence, interspersed with German cursing and other sound effects, has been in progress. While the shooter is going through the pitch-dark tunnel on his hands and knees, with his knife in his hand, he is subjected to the Stravinsky music sequence or ad libs over the sound system by the instructor or a helper. Progressing through the tunnel, he encounters strings hanging from the ceiling (simulating cobwebs). He crawls over partially inflated inner tubes enclosed in fatigue suits (simulating dead bodies).

Meanwhile, the instructor has moved to a position where he can see the student emerge from the tunnel. Upon emerging, and after stabbing a stationary Dummy B, the student proceeds up the stairs to the platform, then down the stairs into a pit, and up out of the pit by means of another set of steps. (This procedure imparts an illusion of height and depth, which is emphasized by a lack of light and by previous combat tension.) As he proceeds, a sentry-killing sequence is played over the record player and a curtain is pulled which exposes a moving dummy which, for a short distance, falls towards him. This dummy is dressed in a Jap uniform and is illuminated by a dim blue light. After using his knife on Dummy C, the instructor (remaining out of contact with the student) tells him to place his knife on the ground. He is then given back his pistol, which he loads, proceeding under the guidance of the instructor on his way to Target No. 5. A sound sequence of a dog barking and growling is sent out over the record player at this time.

As the shooter goes through the open door at point D, a half silhouette rises from the floor and he fires the first two shots of his second magazine. He then approaches a door which swings in either direction (E).

If he kicks the door open and enters the next room, he fires at Target 6, which is a quarter silhouette concealed in a window frame, and exposed when a shutter swings out. (The cord controlling the spring latch is pulled by the instructor.) On the other hand, if the shooter pulls open the door, he fires at Target 7, a half silhouette which rises from the floor and is illuminated by a red light. (A discussion of the best ways and means to enter doors of rooms occupied by the enemy is held at this point.)

During the firing at Targets 5, 6, and 7, sound effects over the amplifier have consisted of a whispered conversation interspersed with faint groans and pleas such as would be made by a wounded man asking for water.

Proceeding over a flooring, sections of which have been placed on pivots so they will tilt slightly to simulate unsteady footing, he enters the area of Target 8, which is in total darkness. There he returns the fire of Target 8, which is a life-size silhouette of a German soldier illuminated by the muzzle blast of a blank-firing pistol installed in the dummy.

After a short pause, the instructor tells him to proceed and, at the same time, pulls a string which rattles some cans to his immediate left. These cans are in complete darkness and, if the shooter fires at them, he is reprimanded by the instructor for shooting at something which he cannot see.

He then approaches a door at Point F. He pauses there and a record sequence of a Japanese rape scene involving a white woman is played. He is told to kick open the door and get the Jap. As he goes through, a life-size silhouette of a Jap (Target 9) fires at him. These are the last rounds in his magazine (provided he has not fired at the cans) and he is told to reload before proceeding to a curtain at point G.

A short music sound sequence commences over the amplifier at this point and a conversation (German) involving a number of persons is heard. He is told to listen and he hears the sound of bottles, laughter, and cards being shuffled. The instructor tells him there are some Germans in there playing cards and he is to go in and get them. In the corner, under a bright light is a standing dummy of an American soldier in full equipment (a sergeant with his stripes exposed to facilitate recognition). If the student fires at it, he is reprimanded for shooting one of his own men when recognition was easily possible. (This happens to about 10 per cent of the shooters.)

(*Continued on page 23*)

What Gun—and What Target?

By RAY CARVER

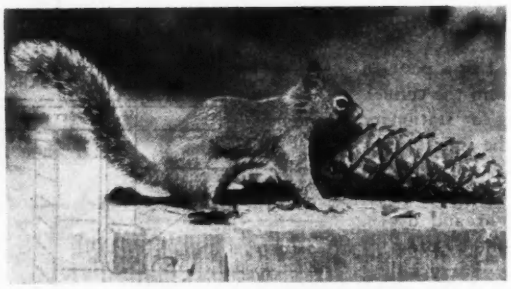
THE PROPER GUN for taking various game animals provides an endless source of argument whenever shooting men get together. Proof, based on actual experiences and results of careful experiments, as well as theoretical considerations, is used to support various contentions. These range from wild claims that, if properly placed, the .22 Long Rifle will kill any game on the continent up to 150 yards, to the equally absurd statement that the .30-30 isn't powerful enough for a sixty-pound deer.

Recently an article on the subject, accompanied by charts showing the location of heart, lungs, spinal cord, and other vulnerable parts of the anatomy of bear, deer, and other game served to throw more fuel on the fire. It included a review of actual experiences to support the claims regarding reaction of game to properly placed wounds. Some were good sense—and some pretty broad statements!

All of us who have killed game over a period of years have had some experiences which could be used as proof to back up statements which may seem incredible. I have killed a lot of game and have been associated with hunters and shooters for forty years. I've made some freak shots, and I've heard of many others. But any time we use the results of freak shots in this time-honored controversy, we're just feeding the argument!

My gripe, as far as the article mentioned is concerned, has to do with the author's contention that any game on this continent can be killed with a .22 Long Rifle cartridge—if the bullet is properly placed. His only limitation was a maximum range of 150 yards. Without definite proof, statements of this kind—though used to stress the importance of placing the bullet in a vital spot—are dangerous.

There is no argument against the desirability of more carefully placing the hunting bullet. But to make an unqualified statement that a bullet striking the heart will invariably cause instant collapse is asking for it. Along with countless others, I've had too many experiences to the contrary to swallow that claim. For instance:



I was out one time with a .22. A big jack rabbit got up about fifty yards from me. He didn't run straight away but swung nearly broadside. I took one snap shot, but there was no indication that I had hit him. I stood and watched him run up a coulee for what seemed nearly a quarter of a mile. Suddenly he started going in a big circle, which decreased in diameter until he fell.

There was snow on the ground and I explored his tracks. The spot where he was hit was marked by a ball of fur and the trough of the bullet in the snow. For several jumps there was no blood; then it was splattered on both sides of his tracks to the spot where he fell. I paced that distance and it was 200 long paces. I opened him up and found that the bullet had passed directly through his heart. Yet, if there had been cover within 100 yards or so, I wouldn't even have followed him, so sure was I that I had missed completely.

Should I now claim that every jack will run for an eighth of a mile, with no indication of being hit, after a heart hit?

A similar experience was on larger game. Armed with a powerful rifle, I spotted a big mule deer across a canyon. He was almost facing me and I judged the distance as 200 yards. He was motionless and I was shooting a .30-40 and using 180-grain belted bullets.

I tried to hold right under that buck's chin. At the crack of the rifle he came end over end down the mountain, finally stopping in a thick clump of brush not much more than 100 yards from me. He was out of my sight but I could see the brush moving and hear his threshing.

At last, things quieted. Still I waited, ready. A good thing I did, too, for here he came—head down and staggering but still trying to get away. Another shot through the neck put him down for good.

On dressing him I found that the first bullet had entered the chest lower than I expected. (He was above me when I fired.) It plowed a deep furrow through the top of the heart and came out just behind his left foreleg. That wound, of course, would have killed him. But it wasn't any instant collapse, even though his heart was hit. He weighed 235 pounds dressed.

Thus, it seems that any positive prediction that a bullet striking the vital heart itself always will cause practically instant collapse is just so much theory. A big grizzly would have had time to do a lot of damage in the time it took that buck to die.

Any prediction concerning instant collapse presupposes that every animal will react in the same way to the shock of a wound. Humans don't, so why should animals? It is logical to assume there is a great difference in the vitality of animals, too.

Perhaps a great deal depends upon the cycle of functions of vital organs at the instant the wound is made. If the lungs have just been filled and if the pulse is at the top of its power, the shock may be greatly reduced. Conversely, if every vital function is at ebb, it may take less shock to kill.

The brain is more vulnerable than the heart. But how easy is it to hit the brain, or the heart, or the spinal cord of a game animal under usual hunting conditions?

Take a full-grown black bear on which the brain and heart areas are larger than on a deer. The chart shows a brain area, side view, of about two and one-half inches, vertical, by four inches, horizontal. That's about the size of a condensed milk can. If you have plenty of ammunition, go out and try hitting that can, using the offhand position you would use in the field, at the moderate range of 100 yards. If you can group your shots that closely with a hunting rifle, you're plenty good!

The heart, slightly larger, is a better target. Make some

targets with heart areas clearly marked. Unless you have exceptional eyes, you can hardly see them through iron sights at 100 yards.

Deer have been found starved to death because of crippling injuries, such as bullet-torn jaws. Perhaps the fellow who caused the wound was trying to make a neat brain shot. Personally, I am in favor of trying to place shots so there will be a minimum of cripples. But trying for an area which the average hunter is incapable of hitting consistently is equally as foolish as going overboard in the matter of power.

You can get too much of this, too, and there are several good reasons why too much power is bad. One is the overconfidence it creates in the minds of poor or careless shots. Give some men a rifle which has a killing range of 600 yards and they imagine themselves 600-yard marksmen. Too, some of the more powerful cartridges have too much recoil for the hunter who doesn't shoot twenty times a year. It isn't that the recoil actually hurts; it is the fear of it—and of the sharp muzzle blast—which develops flinching.

So it seems that larger and more powerful rifles won't solve the problem of crippling game. Trying for a neat brain shot won't either, for the average hunter. There are too many places about the head to cause badly crippling wounds.

What's wrong with those shoulder shots? With a rifle which has power and penetration enough for the game sought, the fellow who holds on the shoulder is more likely to bring in game with a minimum of loss than is the fellow who tries to get fancy with a gun too light in power, or the shooter carrying the heavy load. By using the shoulder as an aiming point, there is a good chance of striking heart, lungs, stomach, large bones, or neck if the shot misses the point of aim by as much as a foot or more.

Of course, on our biggest game the hunter needs a surplus of power as a factor of safety. Power, however, is useless unless directed accurately. The old .30-30 will kill the toughest grizzly or Kodiak just as dead and as quickly as a .375 Magnum—if the hunter is sure of being able to place his shot just right. But don't tell me the .22 Long Rifle will kill those fellows, no matter how cool and good the hunter may be.

Why not use good horse sense in hunting, just as thousands of practical woodsmen do every fall? Use a rifle with adequate power for game and hunting conditions. The .30-30 class, which embraces quite a variety of calibers, certainly is adequate for deer and medium bear up to 150 yards. If longer ranges or larger game are likely to be encountered, boost the power to a .300, .270, or '06.

But refuse to take those long, tough chances where any hit is doubtful and a vital one is pure luck. Why not be sure of living to tell—or write—about it?

And, last but not least, it is important to learn to shoot your rifle *by shooting it*. Strange as it may seem, too many hunters are not sufficiently well acquainted with their rifles to know just how to handle them under all the conditions encountered in the field. If practice doesn't make you perfect, it will certainly make you a *better* shot, and you will learn to know your weapon better.

That practice shooting should follow the same style as the shooting you expect to do in the field. I am certainly not in favor of going in for stunt shooting, but field shooting with sporting rifles at stationary and moving targets at various unknown ranges and in a variety of terrain should be the order of the day. ♦ ♦ ♦

House of Horrors

(*Continued from page 21*)

Proceeding on around the pillar, he approaches another curtain and listens to continued sound effects of the card game in progress beyond it. If he has not fired at the American dummy, he has eight rounds left in his gun and, as he pulls aside the curtain, he fires at Targets 10, 11, and 12. These targets are life-size silhouettes of three Germans sitting at a table playing cards by candlelight.

After firing at the three seated targets (three bursts of two—seldom done—usually one of the card players is missed), he should have two rounds remaining in his pistol. Seeing no other targets, he is allowed to relax and, as he does so, the instructor pulls Target 13, which is a three-quarter-size silhouette bobbing out from behind a pillar, firing a blank gun as it comes into view. The shooter fires his last two rounds at this target.

It is difficult to describe by written words and diagrams the effects of this range on the shooter, but most of the elements involving the combat use of the handgun have been experienced. The student has been subjected to physical and mental tension, and to the element of surprise and the unknown. He has faced twelve silhouette targets at which he has fired bursts of two shots. None of these silhouettes have been at any greater distance than ten feet. Some of the targets fired back at him. Difficult, but realistic, shooting conditions have been brought about by poor lighting, unsteady footing, sound effects, et cetera. The chance has been afforded for the shooter to learn by his own mistakes. He has had the opportunity seldom found in combat of being corrected on the spot by the instructor at the time and under conditions in which the mistake occurred.

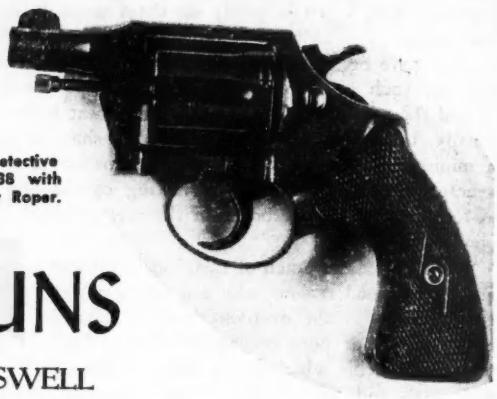
A careful observation and study was made of the records of 500 men, who had just previously qualified on standard target ranges either as Marksman or Expert with the .45 pistol. These 500 men, when projected into the "House of Horrors," averaged four hits out of a possible twelve silhouette targets. After these same 500 men had received instruction in "instinctive pointing," (Colonel Applegate's system of training in the combat use of the pistol, described in his article, "Training Combat Pistolmen," in the July, 1944, issue of THE RIFLEMAN—Ed.) they were again sent through this range. (Changes in lighting and target location were made to provide a fair test by eliminating to a great extent any benefits derived by previous familiarity.) The average number of hits on the silhouettes increased from four to eight for this group.

Create realistic combat conditions and situations. Train the shooter to fire under these conditions, and confidence in himself, in his ability, and in his weapon will be achieved.

The pay-off will be in LIVES—lives saved for us; lives taken from our enemies. ♦ ♦ ♦

GOOD STOCKS—

Smith & Wesson Safety Hammerless .32, with Goodwin stocks.



A Colt Detective Special .38 with Stocks by Roper.

NEW GUNS

By ARTHUR D. CASWELL

THE FACT THAT NO TWO PERSONS seem to have hands that are the same size or shape makes it impossible for handgun makers to satisfy all shooters. Don't misunderstand me; good scores can be made with the factory stocks. But stocks can be made which will give you a bit more hand comfort, and which will make for a more uniform grip each time the weapon is picked up—and these things will tend to produce more uniform scores over a period of time.

In a handgun of caliber .32 or larger, using regular factory stocks, the shooter is apt to get a bit of punishment from recoil. This is due, in part, to the fact that the average wood stock stops below the direct line of the recoil. This leaves the rear part of the frame exposed and this part is usually too narrow to permit the shock of the recoil to be comfortably taken up in the hand.

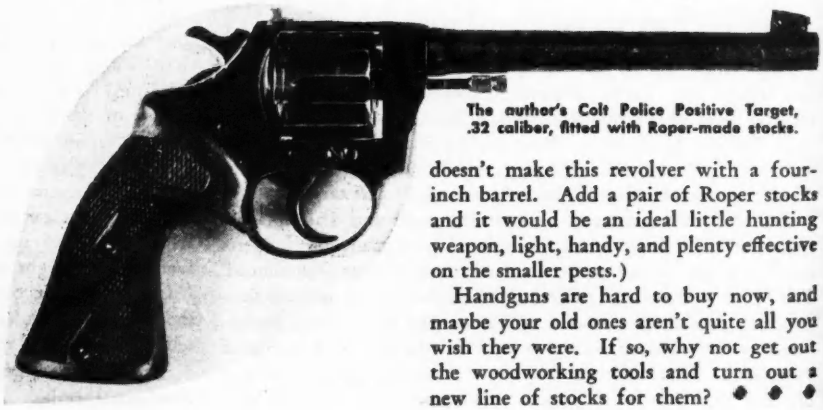
Why not build the stocks up over this portion of the frame, thereby correcting this situation? It can be done quite easily. Perhaps you yourself do not care to take the time to make the stocks, or perhaps you haven't the skill—although it is not a difficult job. In either case, there are plenty of craftsmen, scattered all over the country, who will do the job for you: Walter Roper, of Springfield, Massachusetts—Lew Sanderson, of Detroit—to name but two. These men can satisfy you, however specialized your need (or desires) may be. They know guns, and they know the whims and fancies of shooters. They know just what is required to give you that certain "it-fits" feeling which insures better scores on the range or the hand comfort desired in the defense weapon.

Another point worth mentioning is the fact that the average factory stock places the trigger finger too high above the line of squeeze, and you experience some conflicting action when you attempt to squeeze off that perfect ten. Many attempt to correct this fault with grip adapters, but these gadgets add little to the appearance of your handgun, and a loose one will give you trouble in a match. Why not incorporate this correction in your new wood stocks? It will pay you dividends, and you will not sacrifice anything in appearance.

Many times I have sought the ideal pocket weapon and, so far, have never settled on any particular one for all conditions. The nearest to the ideal for all-around use for me has been the Colt Detective Special with a pair of neatly fitting grips made by Roper. I get comfort with this combination and I get accuracy without any loss of time in drawing or in rapid fire.

Certain types of work permit the use of a lighter weapon and, for times like that, I substitute my little .32 caliber Smith & Wesson Safety revolver. The barrel is only an inch and a half long and it, too, is fitted with a special pair of stocks, this time made and fitted by Goodwin. These stocks are not bulky, yet they are designed to permit direct action on the trigger and to relieve considerably the shock of recoil. I once had a .38 caliber revolver of this same make and type, but the punishment meted out while using the regular factory stocks was such as to make accurate shooting impossible for me.

I have owned a .32 Caliber Colt Police Positive Target revolver for about fifteen years. I have always liked this revolver for knocking around; yet most of these years I have never felt that I was able to get all that this weapon was capable of giving me in the line of accuracy for the reason that the factory stocks were wrong for me. This was quickly proved one day when I slipped on the Roper stocks made for the Detective Special. I needed only to shoot a couple of scores to convince myself that the Roper stocks were all that I needed for this handgun and I lost no time in getting them. I feel that they have greatly improved the appearance of the weapon, and they have certainly improved my accuracy with it. (I wonder why Colt doesn't make this revolver with a four-inch barrel. Add a pair of Roper stocks and it would be an ideal little hunting weapon, light, handy, and plenty effective on the smaller pests.)



The author's Colt Police Positive Target, .32 caliber, fitted with Roper-made stocks.

Handguns are hard to buy now, and maybe your old ones aren't quite all you wish they were. If so, why not get out the woodworking tools and turn out a new line of stocks for them? ♦ ♦ ♦

The African Winchester

(Continued from page 9)

bullet jacket to stand up, or perhaps a heavier bullet at a corresponding velocity, you'd really have a killer for big game.

Though introduced in the black-powder century, this Winchester was not designed for black-powder cartridges. It was originally made for the .30-40 Krag cartridge, and adapted for the .38-72 and .40-72 later. I believe one of the original 6 mm. Navy cartridges was also chambered in the Model 95 for a short while. Later, the .35 and .405 and .30-'03 and .30-'06 were added, as was the .303 British.

In tests by the New York State Ordnance Board, it won all Rapid-fire and long-range target events. In one Rapid-fire demonstration, fifty-six shots in one minute were fired with it. With hunters all over America it quickly became very popular, and a .40-72 Model 95 was Colonel Whelen's favorite hunting arm for over a decade.

Admittedly, the rifle has faults. It doesn't matter very much that it is complicated to take apart and reassemble, or that it is hard to clean from the breech with a rod for those are objections to a military rifle that do not apply to a sporting arm. But it is a bit awkward to carry with its protruding box magazine; a bit on the heavy side. But I don't see why Winchester could not have remedied those faults. Certainly they could have made a three-shot flush magazine for those who preferred it. Probably they could have arranged a detachable box magazine, such as is used in the Savage sporters and many .22's, which is my idea of a perfect rifle magazine. They probably could have lightened that steel breech in places that would not have detracted from the gun's safety or strength.

Why didn't they? Why is the gun no longer manufactured? The answer may be found in the storm of criticism which was hurled at every nonbolt action in the 1920's. The bolt action had come to the front as the top military weapon of the war which had just ended, and rifles of this type were the outstanding choice of the target shooting fraternity. As a natural result, every sporting magazine of that decade was full of propaganda in favor of the bolt action and against everything else. The Winchester Company, sensing the trend, rode with it by producing a bolt action of their own, the Model 54. The Model 95 was discontinued in .30-'06 caliber when the new model came out, around 1925, and discontinued in all calibers around 1936.

That has always been a source of regret to me. I was lucky enough to get a Model 95 .30-'06 in almost new condition, and it has accounted for seven mule deer and one moose with perfect satisfaction. But I wish the Winchester Company had seen fit to improve and remodel it, as they did their Model 86 to produce the Model 71 .348. Now that the battle in the books has subsided a bit, now that there is no longer need to plug the bolt action since the Army now uses a self-loader, simple souls who like a lever action are allowed to buy one without great efforts being made to discourage and convert them, and there should be quite a few who would go for a streamlined lever-action .30-'06, .270, or 7 mm., not to mention the .35 and .405.

In those heavier calibers, the Model 95 made a real gun for heavy game at medium ranges. Elmer Keith, authority on hunting rifles in America, has great praise for it. He considers the .35 Winchester better than any .30 caliber, better even than the .300 Magnum, for elk, moose, and big bear at woods ranges. And he says the .405 is better still.

In dust tests and rust tests the gun was affected more than the less complicated bolt actions. Also it proved not as handy for rapid recharging of the magazine and for prone shooting as the bolt action. Hence, it was finally not accepted.

Altogether, however, the Model 95 did well, very well indeed for a sporting rifle. The tests were severe and developed weaknesses in other guns besides the Model 95.

As it was, I understand that Roosevelt's Rough Riders used the Model 95 in the Spanish-American War; and, in the first World War, several hundred thousand Model 95's (chambered for the 7.62 cartridge and sold to Russia) gave better satisfaction than some of the war-made bolt actions.

To me, this was an interesting discovery. Here was a commercial, reasonably priced sporting rifle that would handle such powerful cartridges as the .30-'06—a rifle with all the accuracy an experienced hunter could require, with all the strength necessary for safety—a weapon utterly reliable, embodying all of the advantages which have made the lever action so popular with hunters all over America. Here was the short, crisp trigger pull so desirable on a hunting arm; the big, outside hammer, handier than any Springfield or Mauser safety; here was the swift, handy lever action which could be reloaded in two smooth, simple motions without ever removing your finger from the trigger guard and without moving the rifle from your shoulder, with no movement of hand or action to cut off your view of the game. And, if a hurried second or third shot was needed, here was speed—speed enough that Ad Toepperwein could fire five shots from a Model 95 in three and one-half seconds and make a ten-inch group at fifty yards. These were worthwhile advantages in a weapon for use on heavy game.

In view of all this, who can blame me if I call this the highest development of the American sporting rifle? The bolt action isn't American; it's European. Our Springfield, when all is said and done, is merely a copy of the German Mauser. But the Winchester lever action is pure American, dating back to frontier days; a hunter's rifle, made handy for men who wanted to be able to shoot fast at game or hostile Indians without hours of practice or a long course of military training.

True, the box-magazine Model 95 isn't as American as the tube-magazine models; but in developing a lever action to handle such long and powerful cartridges as the .30-'06, Winchester made a real achievement. No other hand-operated action save the bolt will do it.

Indeed, the Model 95 seems to have given satisfaction wherever it was used. Thousands of them are in active use today in Canada and the United States. The Model 95 in .303 British caliber has always been a popular choice in Canadian big-game fields and many a hunter there keenly regrets that it is no longer made.

So, it is only fitting we pay tribute to the Model 95 on this, its fiftieth anniversary. Excellent as a sporting rifle, and fair as a military arm, it was all gun and all American. ♦ ♦ ♦

Granddad Was a Realist

By GLENN R. VERNAM

IT IS A FAR CRY FROM Governor Thomas E. Dewey to old Peter Stuyvesant, but it is interesting to note that New York, the home of the Sullivan Law, was not always a place in which possession of a gun made a criminal of the honest citizen. As a matter of fact, time was when gun ownership in New York was required by law!

Back in 1664, when the English took over Stuyvesant's Dutch colony, one of the first legal regulations they enacted was that every able-bodied man in the colony keep and maintain a serviceable gun and adequate ammunition. Furthermore, all such men were required to do a certain amount of target practice and, so equipped, were subject to call for military service at all times.

Several of the colonies had laws expressly forbidding any but expert marksmen from shooting in the presence of the Indians.

A provision in this edict took care of the boys who were not fortunate enough to own one of the less-plentiful, up-to-the-minute, sure-fire flintlocks. The Laws of New Netherlands, 1665, states that at least one-third of the colonists shall be trained in the use of the old wheel locks and matchlocks. This helped to assure every citizen of something in the firearms line until more and better equipment could be brought to the young settlement.

Nor was New Netherlands alone in her regard for firearms. Throughout the American colonies, *all* responsible governors and community leaders viewed John Citizen's gun as the main requisite to peaceful and successful progress. This is made evident by the numerous colonial laws compelling the settlers to own and practice with weapons, and in other records which show the importance attached to firearms. In fact, but for the guns in the hands of everyday householders, it is extremely doubtful if there would have ever been any permanent settlement in the New World.

A letter from the Governor of Virginia to the London Company, in 1622, portrays the paramount concern attached to citizen arms. His message was a request for supplies sorely needed by the colony. And in it he stressed the great necessity for guns and ammunition, placing them even ahead of the essential food and clothing.

That the backers of the colony saw things in the same light is evinced by mention in the Records of the London Company in Virginia. They state that the Governor's request was answered by a large shipment of firearms, including fowling pieces, muskets, powder, and shot. . . . The ultimate success of the colony demonstrated the soundness of their reasoning.

In 1337, when war between France and England was impending, Edward III of England forbade all sports but archery. It was not a bad idea, either. The defense of England, he knew, depended largely on the skill of England's bowmen.

Another example of the realistic thinking carried on by leaders who valued the welfare of their people may be found in the Records of the Massachusetts Bay Colony for 1628. Heading the list of fundamental requirements sent out to the new settlers, was armament enough to insure at least one gun for every man. The list includes:

"Ten full muskets, 4 foote barrill, with match locks. Eighty bastard musketts, 4 foote in barrill, 90 bandoleers, with bullet bags, for musketts; 6 fowling peeces, 6½ foote longe; 4 fowling peeces, 5½ foote longe; 10 horn flaskes for fowling peeces; 12 barrills of powder."

Nor was this any pecuniary gesture on the part of the sponsors outfitting the colony. Some idea of the cost of such equipment is found in the accounts of Merchant John Pynchon, of Hadley, Massachusetts, for the year 1670. His records show the following items to be listed in his stock:

"Guns, 20 shillings and up. Fowling pieces, 25 shillings. Gun locks 6 to 8 shillings. Powder flasks, 5 shillings. Flints, 6 to 8 pence. Match, 2 pence per fathom."

Comparison of dollar values with the times, places these prices fairly well in line with present-day costs.

The governing bodies of that day, however, did not stop at merely supplying the community with guns against a day of need. They got busy and saw that each individual was properly equipped with, and practiced in the use of, suitable weapons before the day of need arrived. Like New Netherlands, they all had mandatory laws, almost from the start, that placed possession and use of firearms quite on a par with citizenship. Perhaps that was why a bunch of woodsmen-farmers were able to win a couple of wars, chase the military might of European oppression out of the Western Hemisphere and take over a treasure house of natural wealth for democratic purposes!

One of the first settlements to put this realistic attitude into practical form was the colony of Jamestown. We find in the Statutes of Virginia, 1619-83, that every male between the ages of sixteen and sixty, unless exempted for physical disqualifications or certain offices, was compelled to keep at hand a serviceable musket and adequate ammunition at all times. If he were too poor to buy this, public employment was to be provided for his earning it. He was, moreover, obliged to keep both the gun in proper shooting condition and himself in proper practice. Failure to comply with any of these requirements was punishable by a fine of five shillings or more. The collective laws of pioneer Virginia placed gun ownership in a position that is only comparable to the present-day necessity for a motorist's auto-

mobile driver's license or to a war worker's birth certificate.

Maybe that accounts for some of the legends of Virginia riflemen; legends made by men who saw the Right to Bear Arms as something other than the football of infringement addicts!

The Bradford Print of Laws of New Jersey, 1704, even contained a directive stating the minimum amount of powder and ball each man should have in reserve at all times. Five shillings was the cost of being caught understocked. The Archives of New Jersey contain several statutes delineating the proper arming, training, and everyday gun toting, of its sixteen-to-sixty age-group of citizens. This also included bond servants, their masters being held responsible for the duties of such underlings.

Several of the colonies had laws which decreed that their members should not display poor marksmanship before the redmen. At gatherings where Indians were present, no inferior riflemen were allowed to perform, and thus betray to the natives the fact that not all white men were dead shots. In fact, some settlements went so far as to prohibit the poorer gunners going any distance afield when hunting. There were too many crafty black eyes watching for a clue to possible paleface weakness. If the would-be hunter craved the privilege of going back in the tall timber, he must first attain a satisfactory degree of proficiency with his chosen weapon. (The rule might be applicable today, albeit for different reasons!)

In 1639, the New Haven Colony had a law which ordered the assembly of its male citizens in the Public Square, at stated intervals, for gun inspection and target practice. This was conducted by the local militia captain. And woe be to the men who showed up with deficient or poorly cared for equipment. Five to twenty shillings fine or military punishment was the reward for such carelessness.

New Hampshire's law of 1673 was very similar. It provided stated penalties for persons whose arms were not kept cleaned, loaded, and ready for business at a moment's notice. This included the obligation to keep one's gun always at hand, both at home and abroad. An interesting side light of the New Hampshire laws was a ruling that permitted only church members to become military officers.

This was reflected in an old Massachusetts law whereby one of the gravest punishments to be inflicted on lawbreakers was the disarmament of the individual and the confiscation of his weapons. A stern penalty indeed: the ignominy of being stripped practically naked before one's neighbors!

Even the gentle, peace-loving Quaker folk were not above incorporating the important position of firearms into their laws. That well-known picture of The Puritans Going to Church is not overdrawn, by any means. Those old blunderbusses were not merely stuck in to add color to the scene. They were there by law and edict.

The Records of Massachusetts, Volume 1, 1638-41, state that it was compulsory for every able-bodied male colonist to own a gun and carry it to church, to Thanksgiving services, lectures, and all public gatherings. He was liable to punishment if he neglected to keep it always loaded and in first-class firing condition. The law required that it be kept within hand's reach while he slept, ate, worked in the field, or journeyed about the countryside.

They figured, and justly so, that the life of the community depended on the readiness of its firearms and the marksmanship of its people. On those guns hinged the establishment and perpetuation of government, church, home, school, field, and business. A man not equipped to do his part was a liability and detriment to the general welfare.

A great many things have changed in a great many ways since then. We no longer secure the bulk of our food and clothing from the wilderness. No scalping parties lurk in the back yard to catch us on the wrong side of the Welcome Mat. Still, our Utopian age of progress and enlightenment is not exactly a carefree haven of security. Lust and hate and envy continue to glare at us from out the murky fog of Old World greed. And the red warriors who skulked in the Allegheny forests were but rowdyish Saturday night pranksters in comparison to the bestial butchers this so-called higher civilization spawns at periodic intervals.

Everything considered, it might not be a bad idea to inject a little bit of great granddad's realism into the laws governing ownership and use of what might be called the principal foundation stone of American Democracy! ♣ ♣ ♣

"It's loaded, Sheriff. And does that surprise ye? Am I not always law-abiding?"

"It's A Rifleman's War"

(Continued from page 7)

The last few days at the school are used for dawn and dusk sniper training. The sniper learns to adjust himself to the dawn ground haze and other hazards of the early morn as well as putting his cat eyes in working order for the dusky evening, when he may have to go out and "do a job."

For his graduation present, the sniper is given full possession of his special '03 and the telescopic sight.

"After that," Colonel Hinds says, "he sleeps with that rifle. He takes care of it like a bottle of cognac in the middle of the Reich! After all, once a man learns what a rifle can do—how valuable it is to him—how often it will save his life—he values it! You don't have to urge men to take care of a thing when they know that it is the best life insurance they can get!"

After the Colonel left the area, Lt. William Woodbury, who acts as the company sniper gunsmith—just for the love of it—popped up with a good yarn.

"I remember back in Sicily," he recalled, "we were held up near Palermo by an 88. While the infantry went around to clean it up, Colonel Hinds took a couple of shots at the emplacement—just to see what would happen. The 88 stopped firing.

"When the infantry took the position, they found two very dead Krauts and two more in a very friendly mood.

"He's that kind of a guy," the lieutenant said. ♣ ♣ ♣

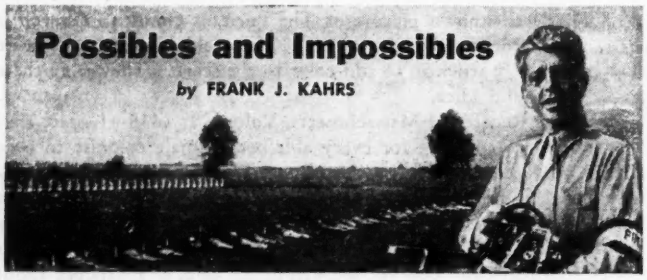
(Material for this article is taken from "How to Kill Foe With First Shot," by Joe Weston, and "Colonel Hinds' School for Snipers," both published in *Warweek*, Sunday supplement to *Stars and Stripes*. By permission of Army Public Relations, Washington, D. C.)

A PAPER FOR PEOPLE WHO SHOOT

Rifle

VOL. 8, NO. 8

BRIDGEPORT, CONN



Possibles and Impossibles

by FRANK J. KAHRS

ONE OF my fans has asked me to say something about the definition of the terms Wart, Nipper, Magpie, Outer, Center or bull's-eye as used in the old days in scoring targets. To be absolutely correct, I consulted the "American Rifleman's Encyclopedia", which was put out by the Peters Cartridge Company back in 1902 or thereabouts. It was the rifleman's bible of those days and it defines these terms as follows:

NIPPER—A shot hole that barely touches the edge of a bull's-eye or a ring in the target.

WART—Meaning that particular shot does not touch the ring of the higher count. In other words, it should be a 4 at 8 o'clock instead of a bull at 8 o'clock.

MAGPIE—A shot in the ring space of a military target that counts three. The signal is a black and white cross. Well, of course, that's the conventional Maltese cross, as we call it, at present used to define a three on the target.

OUTER—A space on a Creedmoor target or similar target that counts 2 when hit with the bullet.

CENTER—A space on the Creedmoor target that counts 4. That was when the bull's-eye was square instead of elliptical and the maximum score was 4.

Interesting, eh wot!

* * *

The other day we wrote to one of our correspondents from China. Yes, a small borer who picked up his copy of the "American Rifleman" just received and noting our comments on care of firearms in the April issue, decided to write in about his own 37, which he said had been in storage carefully greased and wrapped for the duration. Wanted to know what it would need when he again set it up to resume shooting.

In view of the fact that there are many boys in the same fix, we thought it would be interesting to give you our reply, which, in effect was that the rifle would not need re-checking if properly stored, or if it had been greased and stored under proper conditions. But even so, we would be glad to check the gun and test it for a small consideration; that is after the final "Cease Firing" has been given.

Our correspondent, by the way, is looking forward with optimism to the time when he comes home and gets back to the small bore game, and hopes that conditions haven't changed too much. He likes the old program of match shooting, slow fire and on your tummy. He doesn't go in for this rapid fire stuff from fast firing rifles, but he does love his 37 and Palma Kleanbore which, he says after two years in matches throughout the Middle West, and with all due respect to our war learned skills, he doesn't see how it is possible to make a better combination.

Thanks, pal!

* * *

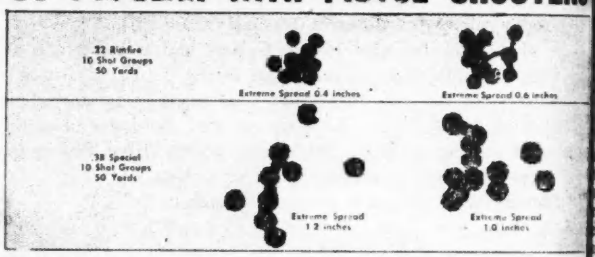
In a bulletin sent out by the secretary of the rifle & revolver club at Palm Beach, we note that there is quite a demand from the members for some 200 yard shooting. That strikes a responsive cord in our otherwise case-hardened heart because we have never gotten enough of long range shooting with the 22.

The secretary of the club, however, states that the members will have to wait for a while because the wind has been blowing for the past several weeks and will continue for sometime to make it hard to stay on the paper at 200 yards just now. Let not our good friends worry too much about the wind at 200. That's what makes the game interesting because, after all, the problem is to stay on the target and to get as many shots in the center as possible. Sometimes you get them all.

Don't wait for the wind to stop, boys, go to it now! The fun is to outwit the wind and that makes for some mighty fine competition. Someday soon we hope to shoot the good old Wimbledon . . . 20 shots at 200 yards.

LIGHTED RANGE HOURS OF RE

WHY REMINGTON "TARGETMASTER" IS SO POPULAR WITH PISTOL SHOOTERS

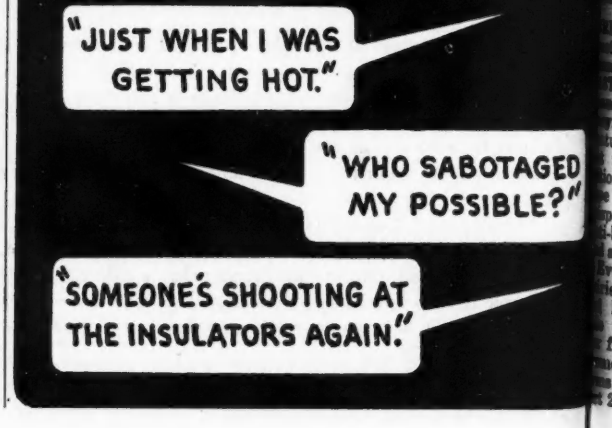


BRIDGEPORT, CONN., August, 1945. The four Remington Targetmaster groups above —fired at 50 yards—are typical examples of Targetmaster dependability. They demonstrate not only *tight* grouping, but also *uniform* grouping.

Naturally, shooters, consider both factors. The ability of ammunition to shoot extremely tight groups must be matched by its ability to keep the widest groups down to a minimum. If you've ever shot Remington Targetmaster, you've found out for yourself that it has these finer qualities. The dependability of Remington Targetmaster has contributed no small share in the winning of hundreds of important pistol matches.

We suggest that you try it yourself when match ammunition again is available. Targetmaster is made in 22, 38 and 45 calibers.

AROUND OUR CLUB . . . . . *The Power Failure*



mington DUPONT News

WEATHER:
DELUGE OF SHOOTERS AT NIGHT;
RANGES FLOODED—WITH LIGHT

CONNECTICUT, AUGUST, 1945 — First Class Reading Matter for Rifle Shooters

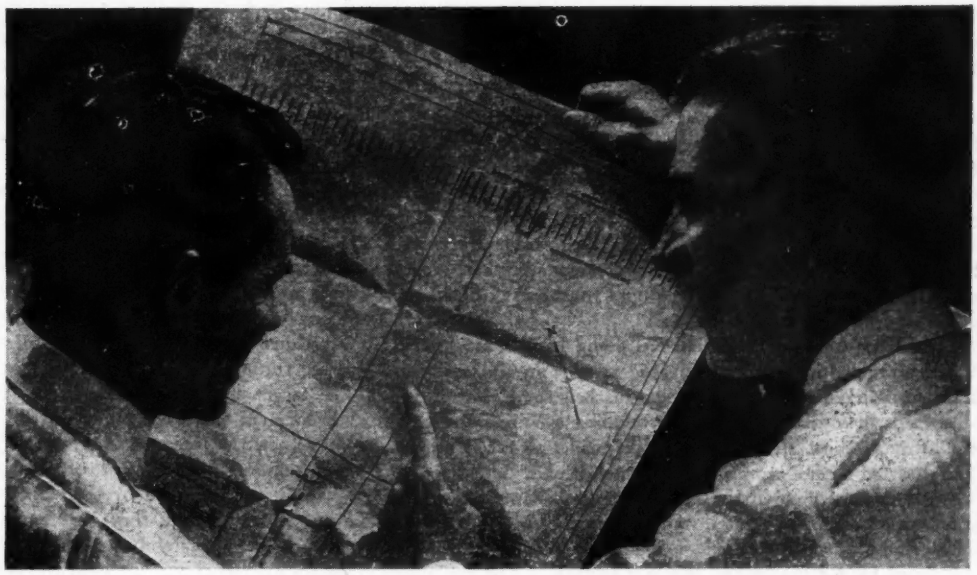
NGES PROVIDE ADDITIONAL RIFLE AND PISTOL SHOOTING

IGHTED RIFLE RANGES IVE SWING-SHIFT ORKERS CHANCE TO SHOOT

IDDLETOWN, U.S.A., Au-ust, 1945. These days, a lot club members are working war plants. Many of them ork long, odd hours and n't have much opportunity get out on the range and hoot. The club with a lighted nge offers these fellows the hance to go out in the eve-ings, even after dark and put some hours of practice and struction.

emington Model 513T arget Rifle Has Smooth asy-Operating Action

IDGEPORT, CONN., Au-, 1945. From butt-plate to zle, the Remington Model T reflects precision work-ship for unfailing accu-y. One of the outstanding tures of this popular tar- rifle is the smooth, easy ion. It has a simple new bolt handle and a short, p, smooth trigger pull, new l-backlash trigger stop, short fast firing pin travel. very day we receive in-ies about the Model 513T, hope that soon we'll be to supply it once more. further details write Rifle motion Section, Remington s Company, Inc., Bridge-t 2, Conn.



Many aggressive clubs throughout the country are planning to install a lighting system on their outdoor ranges to permit after-dark shooting. The Remington plan for lighting a range adds many hours to summer shooting days.

BRIDGEPORT, CONN., August, 1945.—Last October, on this page, we told how members of a Kittanning, Pennsylvania, rifle club had installed an electrical lighting system on their range to enable them to conduct night shoots. Since then, we have received so many inquiries for information on lighted ranges, we have prepared a complete plan for installing lights for an outdoor range.

Here's a good project for wide-awake clubs. Sure, there's a shortage of materials. But show us the job that can't be tackled and overcome when ingenuity is applied. And the results make the job worthwhile. These balmy summer evenings are ideal for shooting. And the lighted range provides many more hours of activity. No need to "close shop" just because it gets dark.

Night shooting, of course, isn't anything new. Some thirty years ago there were regularly scheduled matches at 1,000 yards at Sea Girt, Camp Perry and other places. And recently night shooting has been quite popular in California and some other parts of the country.

The lighting plan shown above is based on 50 and 100 yard ranges and is adaptable for ranges having up to 50 targets. The plan is easy to follow and gives all necessary information as to detail. Construction is relatively simple and can be done with available materials. Live-wire members of your club could do the job in their spare time.

Construction details are available to any club interested in night shooting. Just write to Rifle Promotion Section, Remington Arms Company, Inc., Bridgeport 2, Conn.

Targetmaster is Reg. U. S. Pat. Off. by Remington Arms Co., Inc., Bridgeport 2, Conn.

CONFESSION

By LT. COMDR. HUGH KELLY
and
LT. JOHN R. WARK, USN

DO YOU REMEMBER THE HURRICANE that hit the New England Coast back in the spring of '43? Do you remember the one six months later? Do you recall the heavy snowfall and blizzard in January, '45 that jammed the Boston area with fallen wires, stalled vehicles, and stalled traffic?

At last, we can make a full confession of our connection with these phenomena—and, at the same time, break the big news about our sensational new Varminter, the .225 Gee. . . . For the sad truth is that all three of these climatic catastrophes were caused (unintentionally, we assure you) by two Naval officers who, in endeavoring to create a new, sensational, high-velocity, superaccurate Varminter rifle, went beyond scientific bounds and played with forces so tremendous that Nature rebelled. Even now, most of the data must be withheld, lest other experimenters wreck the world.

Lieutenant Commander Hugh Kelly and Lieutenant John R. Wark, stationed in the New England area, formerly small-bore riflemen, worked into the wee hours in their spare time and on week ends in a small workshop, developing a Varminter which would outvarmint all the high-velocity rifles so far developed. They started with a sample 75 mm. case, necked down to .225. They loaded the case with a new secret propellant so fast that it is burned completely the instant before the primer ignites it. The primer was constructed of Nick-Pen, a new alloy Wark developed by interfusing nickles and pennies. The projectiles were turned down by electronics, in a darkroom at a temperature of 60 degrees below zero. Kelly worked in a substratosphere suit for eighteen hours and finally succeeded in turning out five perfect pellets of .225555 diameter. They were so well balanced they were able to be floated to the loading lab where, after many attempts, they were finally seated in the necks of the Mk. V Model VII Carbon Magnesium Cases with the aid of specially developed photoelectric equipment.

Not knowing just what pressures would develop beyond the 200,000 kilograms expected, or what the muzzle blast would be from the estimated 17,000 f.s., they decided not to fire the rifle from the shoulder. Using the old rifle emplacements at Fort Bleary, where the concrete is eight feet thick, they succeeded in putting together their rifle. They secured the rifle in the scientific new War-Ly vise rest, insuring perfect suspension. The clip of five cartridges was installed in the magazine, the remote firing control trigger was attached, and the inventors left for their plane. This also was their own development; a ceilingless, pressure-cabin, two-seat flying laboratory, enabling them to control, from the realms of the metaphysical, their brain child in the firing pit.

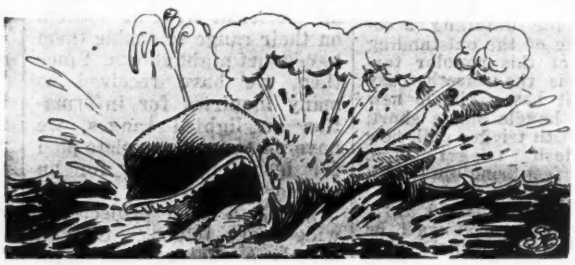
After reaching an altitude they are not at liberty to disclose, Kelly, using the special talents developed by his high-altitude bombing experience, sighted what he thought to be a suitable target for the first experiment. It was twenty miles out to sea: an enormous Sperm whale, floating on the surface. They projected a one mil target image on the whale's side and made ready to fire. (The elevation and windage were obtained from formulae too complicated to explain in detail here.)

They were ready. Kelly touched the button. Their special view finder focused both muzzle and target together and enabled them to see both muzzle blast and impact at the same time. The five shots came out so fast their registering apparatus showed one millionth of a milibar. The whale disappeared and left floating on the surface was nothing but a slick made of Sperm oil and graphite. The concussion was so terrific that a hurricane passing over Key West, Florida, was immediately pulled into this area, causing great damage. Naturally, Kelly and Wark knew nothing of this because it took five days for them to come down and land and by that time it was old news.

Their second attempt was conducted along similar lines. All data were checked and rechecked and five more cartridges were loaded. To date, they had no information on accuracy. Their first test had demonstrated destructive power only. They decided to use a regulation fifty-foot indoor rifle target and fire at the upper left bull. All work completed, they again took off, this time with Wark at the firing controls. The five shots passed through the air so fast they entered the fifth dimension. The target showed evidence of being fired on, but the group was so small that even the finest calipers could not measure it. They knew they were on the right track at last. Five days later, upon landing, they heard of another hurricane, but never dreamed it was caused by their .225 Gee.

In January of '45, they were again ready to try for another group. After many heated discussions, they had decided to fire the trigger-controlled mechanism from below the surface of the earth. They had a company of Seabees dig the hole. Kelly was at the controls and, with his quiet smile, synchronized the trigger and touched off the shot.

After firing, they ascended to the earth's surface and found it covered with eight feet of snow over the whole New England area. They are prohibited from making further tests at this time, but hope to resume their experiments soon from the middle of the Sahara Desert. ◆ ◆ ◆



MORE ABOUT DEER-HUNTING RIFLES

By J. ROGER MUSICK

I READ WITH INTEREST the article, "What Is A Deer Hunting Rifle?" in the April issue. The answers were very interesting and throw a lot of light on an age-old question. The subject matter, of course, was based upon Eastern deer and conditions.

Out here, deer hunting is a little different. Although we have great wooded areas, most of the deer are found in brushy and open country studded with quaker patches and evergreens. Returns from questionnaires issued by the Colorado State Game and Fish Commission indicate that, for the last two seasons, 7 per cent of the deer were killed at distances beyond 200 yards, 60 per cent under 200 yards, and 33 per cent under 100 yards. Many hunters prefer a long-range piece of artillery; and for one who rides a horse through brush and over rocks making a lot of noise all the time, like myself, it is long-range shots or no shots.

	BULLET	RANGE	SHOTS		WHERE HIT	REMARKS	WEIGHT
1.	130-gr. HP	300	6	Running	Forelegs	Dropped in place. Finish shot needed.	225 lbs.
2.	130-gr. HP	450	5	Running	Brisket	Ran 100 yds. Fell and broke neck.	265 lbs.
3.	130-gr. HP	250	2	Standing	Forelegs	Dropped in place. Finish shot needed.	175 lbs.
4.	130-gr. HP	425	5	Running	Ribs	Slowed down. Fell within 100 yds.	225 lbs.
5.	130-gr. HP	200	1	Running	Loin	Dropped in place.	130 lbs.
6.	130-gr. HP	30	2	Running	Shoulder	Ran 100 yds.	190 lbs.
7.	150-gr. SP	75	3	Running	Ribs	Ran 100 yds. Required 2 more shots.	250 lbs.
8.	150-gr. SP	125	3	Running	Rump	Continued running. Finish shot needed after trailing 1 hour.	275 lbs.
9.	150-gr. SP	500	2	Standing	Ribs	Fell in place. Finish shot needed.	200 lbs.
10.	150-gr. SP	75	1	Standing	Neck	Dropped in place.	180 lbs.
11.	150-gr. SP	100	1	Running	Neck	Dropped in place.	160 lbs.
12.	150-gr. SP	600	1	Climbing	Withers	Dropped in place.	160 lbs.
13.	150-gr. SP	150	1	Standing	Ribs	Walked 100 yds.	300 lbs.
14.	150-gr. SP	70	1	Standing	Neck	Dropped in place.	160 lbs.
15.	150-gr. SP	200	2	Standing	Spine	Dropped in place.	275 lbs.
16.	150-gr. SP	50	1	Running	Neck	Dropped in place.	165 lbs.
17.	150-gr. SP	60	1	Running	Neck	Dropped in place.	180 lbs.
18.	150-gr. SP	225	1	Lying	Throat	Ran 20 yds.	200 lbs.
19.	150-gr. SP	275	4	Running	Ribs	Continued running. Finish shot needed.	250 lbs.
20.	150-gr. SP	225	3	Standing	Ribs	Ran 1 mile. Finish shot needed.	225 lbs.
21.	150-gr. SP	200	1	Standing	Ribs	Ran 50 yds.	175 lbs.
22.	150-gr. SP	425	2	Standing	Flank	Ran 1/2 mile. Finish shot needed.	325 lbs.
23.	130-gr. PP	180	1	Walking	Ribs	Ran 20 yds.	180 lbs.
24.	150-gr. SP	100	3	Running	Hind leg	Slowed down. Two shots needed.	275 lbs.
25.	150-gr. SP	550	2	Standing	Flank	Walked 1/4 mile. Finish shot needed.	225 lbs.
26.	150-gr. SP	100	1	Standing	Ribs	Walked 40 yds.	225 lbs.
27.	150-gr. SP	200	3	Standing	Belly	Walked 200 yds. Finish shot needed.	200 lbs.
28.	150-gr. SP	100	1	Walking	Ribs	Continued 20 yds.	200 lbs.
29.	150-gr. SP	150	2	Standing	Shoulder	Ran 1/2 mile. Finish shot needed.	160 lbs.
30.	150-gr. SP	300	2	Standing	Loin	Dragged 100 yds. Finish shot needed.	275 lbs.
31.	150-gr. SP	60	1	Standing	Neck	Dropped in place.	125 lbs.
32.	150-gr. SP	150	1	Climbing	Ribs	Dropped in place.	140 lbs.

HP--Hollow Point SP--Soft Point PP--Protected Point

I have kept a nineteen-year record of deer kills in Colorado and am enclosing a tabulation of thirty-two bucks killed with a Model 54 caliber .270 Winchester, with twenty-one-inch barrel and Redfield iron sights. Approximately two-thirds of the distances were determined by pacing. Where that was not practical, distances were estimated.

Determination of weights given is the result of seven years research work by the Game Management Section of the Colorado State Game and Fish Commission. This section is very ably headed by Gilbert N. Hunter, Game and Fish Manager. Mr. Hunter and his staff have actually weighed 2,164 Colorado buck mule deer. Most of the weights have been taken hog dressed. It has been determined that approximately 25 per cent should be added to hog-dressed weights to get live weights. The largest mule deer of record in Colorado weighed 410 pounds hog dressed. Out of 2,164, only fifteen weighed over 250 pounds, hog dressed. Following are the weights by age of Colorado mule deer, age determined by denture method and not antlers. (Many old bucks revert to two and three pointers.)

Age	Average Live Weight	Antlers, each side
1½ to 2½ years	123.1 pounds	2 or 3 points
3½ to 4½ years	187.0 pounds	3 and 4 points
5½ to 6½ years	240.3 pounds	4 and 5 points
7½ to 8½ years	258.5 pounds	4, 5, 6, 7, and 8 plus
9½ plus	265 pounds	2 or 3 points or more.

The weights are given so a hunter can properly appraise the game before selecting a gun.

E. Baden Powell's "Killing Power," shows that the majority of guns used for hunting deer are not ballistically capable of killing mule deer properly. Ballistically, the .270 with 130-grain bullet should kill a light-resistance animal such as a deer which weighs up to 206 pounds if hit in the chest at 300 yards. It is the lightest gun in energy and killing power that should be used for long-range work on mule deer. ♦ ♦ ♦

A MAN CAN DREAM, CAN'T HE?

ASK A LOT OF SHOOTERS what they object to in a rifle, and their answers will sum up about as follows: (1) Weight; (2) Insufficient power; (3) Recoil; (4) Noise; (5) Length.

All these things are interconnected. Get a powerful light rifle with a short barrel—and you get a kick like that of a mule, and a blast like the last trump. Contrariwise, get a heavy sweet-shooting gun—and it weighs a ton by the time you've carried it a day in the woods.

So here's *my* idea of the answer:

Take a good powerful sporter (a .375 Magnum, if that's what you want), with the lightest barrel you can buy. Cut that barrel down to twenty inches. (This will give you a sighting radius comparable to that of a pistol, and a blast that will lift your hair!) Next, hollow out the stock as much as safety will permit—and you've got a gun I wouldn't shoot for all the oil in Texas!

But wait! Add one telescope sight. (That takes care of the short sight radius.) Add one rubber recoil pad, like the one of your shotgun. (That gives you a chance of surviving the first shot!) And, last, add one good muzzle brake.

A muzzle brake, children, is a gadget that sticks out beyond the muzzle of a gun that so compresses the escaping gas as to tend to yank the gun forward, thereby offsetting the original tendency of the explosion to kick the gun rearward. That's a words-of-one-syllable explanation of it, but the important thing is—it works. The British put one on a .55 antitank rifle and fired the brute from the shoulder. That's a pretty big gun, but the report I heard was that it didn't kick . . . much.

Anyway, that's my scheme. Seems like to me it ought to be a real deer-huntin' rifle. How will it look? Well, damned odd, maybe. But if it shoots the way I'm dreaming it will . . . who cares?—BRUCE B. BARKER.

POWDER SMOKE: READERS COMMENTS THE NEWS DESK

WHAT GUN—WHICH AD?

Editor:

Nearly every month I answer at least one, usually several, Arms Chest ads. Invariably, one or more of the answers I get reads about as follows: "I have your letter and, although I might be willing to sell my gun, I'd rather trade it for yours."

Now, I've answered several ads, each involving a different deal. Which gun is it this man offers for sale or trade—and which of my guns does he want? To find out, I've got to spend an hour or so checking all the ads in that issue to match the right ad with the right letter.

Why not suggest to your advertisers that they answer in such a way as to identify the deal? "I have your letter offering $75 for my 'excellent-to-perfect' 23-D Savage Hornet, or a trade for your 'excellent' Winchester 52. Will accept the trade, both guns on approval."

Richard Getrault.

The same difficulty in fitting letters to the proper ads exists in this office. When you write us about your own (or any) ad, won't you please identify the ad as to issue, page, column, and location of ad in column? It would save us a lot of work.—EDITOR.

SUGGESTION

Avon, New York.

Editor:

The following appeared in United States News, March 30, 1945, Page 66:

"We are told that an infantry soldier must rely heavily on his ability with a rifle, but, from talking to many men who have gone through this short period of training, I have not found one yet who felt that he had received enough training with his rifle to be able to use it effectively in combat." (By Charles S. Tippets, Headmaster, The Mercersburg Academy, Mercersburg, Pa.)

That being the case, it would appear that The Headmaster might well consider giving a real course in the rifle, putting it on a par with football, for instance!

My own lad, who is representing his country and family abroad, began to shoot at the age of seven, and handled the Springfield with full load at ten. He field stripped and reassembled a Garand the first time he ever saw one, explaining to the goggle-eyed sergeant-instructor that he had read how in THE AMERICAN RIFLEMAN. And he did not learn any of that in school.

Henry R. Selden.

NO TIME FOR MARKSMANSHIP?

Editor:

Please tell Bill Shadel "thanks" and that his story of our Army's lack of rifle "*savoir faire*" is timely and, in my opinion, correct in every detail. My experience as a regimental and battalion commander sustains his findings. I had every officer in my outfits who couldn't qualify with the rifle transferred and replaced by ones who could, on the theory that if the young officers couldn't qualify neither could their men. The result was that eventually we got a 100 per cent qualification and it was a bona fide 100 per cent! I saw to it by certain (Camp Perry) methods that it was. However, I had a terrific battle to get it done.

As most of the old-timers know, officers are told to qualify their units but go to any extreme to see that the records *indicate* a 100 per cent qualification.

In the early days of this emergency, one young regular officer made the remark to me that "a soldier who qualified as Expert wasn't much good for anything else." This officer, then a lieutenant, is now a colonel. This was typical of the majority of young regular officers who didn't know how to use the rifle, the soldier's individual means of protecting the life of the person he is most interested in—himself.

The M1 costs nearly $100 and is capable of putting its shots in a two-inch circle at 200 yards. If the soldier can't shoot well enough to avail himself of some of this inherent accuracy, then why spend that much money? The excuse that there is insufficient time for training is a poor one. If duplication and unnecessary training were eliminated, marksmanship could be taught properly.

If you publish this, please withhold my name as I'm still in service.

Lieutenant Colonel.

SALES OPPORTUNITY

102 N.C.B. Armory.

Editor:

I'm sending in a batch of NRA membership applications and would like to have some more. The guys out here have a lot of money to spend and no place to spend it, and they know a good thing when they see it.

I went out the other day to get a Jap rifle for a souvenir. I found the rifle, but it had a Jap attached to it so I had to get them both. This could have been a different story, and not so funny either, if those Japs had had an NRA to look to for the promotion of good rifle shooting. As it was, this one didn't have a chance. It was a perfect pinwheel between the ears.

J. C. Masencup, GM 2/C.

WELL-ARMED MEDIC

APO 928.

Editor:

I see that some people think their RIFLEMAN is late if they do not receive it by the 20th of the month. They have a lot to be thankful for! Yesterday, the 14th of May, my copy for January came—the first one this year. It is still good reading, as I have found it to be for twenty years.

I agree with Lieutenant Ross about a scope in this climate. I had a 29S Weaver on my SS Winchester Zipper, but had to take it off and use the 103 Lyman, as the scope was always foggy or mildewed. Find a lot of trouble with camera lenses, too.

Incidentally, I find my Zipper (with loading tools) rather handy for getting fresh meat. It seems to drop the wild hogs as reliably as the 180-grain SP handloads for the .30-'06 that I've also used. Primers must be kept very carefully, and I still get some misfires and hangfires. Also find it necessary to load on hot sunny days for best results. I brought No. 2400 powder because of more loads for the one pound I felt I could carry. With the 55-grain Sisk and the 50-grain Sisk SP bullets, it will group into about two inches at 100 yards, with rest. My Lovell is much more accurate, but I find that adequate here and the Zipper cases last indefinitely. The heat and humidity are too depressing to encourage much hunting, especially after the first year. These MP units, having their own rifle and pistol range, are a fine setup for one who enjoys target shooting as I do. Suppose I am one of the best-armed Medical Officers here, as I have my .45 S&W M17 with Roper stocks and my H&R Sportsman, besides the Zipper. Ammo for the .22 revolver is getting scant, but there is as much as I care to use for the .45.

Capt. Howard J. Kerr, MC.

ARM CITIZENS—CATCH THIEVES

Pat Connolly, 38, of Old Tappan, was held at Bergen County Jail today following his capture last night as he attempted to escape from the home of a soldier's wife in Northvale. The soldier's wife, Mrs. Irene Quillen of Tappan Road, shot him through the arm as he attempted to break into the house through a window.

HOME GUARD RIFLE CLUBS

A number of State Guard and Minute Men Companies in various parts of the United States have organized civilian rifle clubs with a view to continuing after the war the personal associations and the community service developed during their service as home guardsmen.

It is interesting to learn from a British news dispatch that a similar program, on a national scale and with the approval of the British War Office, is now to be followed among the Home Guardsmen in England.

In America the movement has taken root in Maryland, Virginia, Iowa, and Hawaii, while in California and New York auxiliary police units have decided to continue their friendships and community service by organizing civilian rifle and pistol clubs under the NRA banner.

THE LAW IN MICHIGAN

Michigan's new firearms law does not ban the use of automatic, semiautomatic, or autoloading weapons.

The conservation department announces that use of such firearms by hunters will be legal if magazines are cut off or plugged with metal or wood to reduce the shell-carrying capacity of the weapons to not more than six shells at one time in magazine and barrel combined. Plugs must be fitted in a manner that will prevent their removal from the loading end.

The law prohibits the use in hunting of automatic, semiautomatic, or autoloading firearms, larger than .22 caliber, if capable of holding at one time more than six shells in barrel and magazine combined.

Expanding bullets are not banned; tracer and exploding bullets are.

The new law does not affect slide, bolt, or lever-action firearms, even though capable of holding more than six shots.—*Michigan Dept. of Conservation News Bulletin.*

EXPERT RIFLEMAN

Using a telescopic sighted Springfield, a Marine sniper killed a Jap 1000 yards away on Okinawa. He killed one Jap and pinned down four others until his buddies could take position to charge.—*Marine Corps Chevron.*

NOVELTY MATCH

The Associated Rifle and Pistol Clubs of Baltimore are putting on a series of novelty matches which are proving to be popular. They use clay pigeons (still, of course, not aerial) and each shooter has five to break, offhand, at fifty yards. Mitchell Kamp, veteran NRA man, developed the idea. Mitch drills a small hole in the clay bird and hangs the target on the rack by means of a small wire hook. The winner is the first man to break his five birds.

The shooters like the action and spectator enjoyment that this shooting-gallery feature gives to the match.

The Association, which holds these matches at the Philadelphia Road Range of the Homewood Rifle Club, has a one-a-month schedule.

BIGGEST GAME

During normal years, more shotgun shells are fired at rabbits than at any other species of North American game. The rabbit also furnishes more meat for the sportsman than any other single species. In Missouri alone, the cottontail harvest in a normal year totals about six million, yielding approximately ten million pounds of dressed meat. Total for the nation is close to sixty-nine million pounds.

SURPLUS SHOTGUNS

Many inquiries are being received regarding the surplus shotguns which newspaper reports have said are to be sold by the Federal Government.

Such information as we have indicates that, after these guns have been individually inspected, repaired, and classified as to condition, they will be offered for sale in assorted lots to recognized jobbers. We do not know whether the offerings will be on a sealed bid or auction basis, but in either case the top price will be the OPA ceiling. Since all offers will probably be at the ceiling prices, some plan for accepting the various offers and dividing the guns on an equitable basis will have to be evolved. We do not know what plan will be followed in this respect. At any rate, there will probably be no sales to individuals by the Surplus War Property Board.

NRA MEN IN THE SERVICE

Word comes from Europe that Frank Wyman is now Lieutenant Colonel F. L. Wyman, and that John Scofield has moved up to become Captain John Scofield.

Meanwhile Lieutenant Frank Daniel has left his instructor's job in the Navy's Gunnery School at Pensacola to go to sea as Squadron Gunnery Officer on an escort carrier in Pacific waters.

Bill Shadel, American Rifleman and Columbia Broadcasting System war correspondent, has, meantime, returned to duty at NRA Headquarters.

Former NRA Director Emmett Swanson served as Ordnance Officer for the 5th Marine Division on Iwo Jima and found that he had been promoted to Lieutenant Colonel when the Division got back to its rest area.

Major General M. A. Reckord, NRA Executive Vice-President, has recently returned to the States after eighteen months duty as Provost Marshal General of the European Theater of Operations. Although eligible for retirement, General Reckord will remain in active service at the request of General Marshall, to carry on a special assignment.

COMING EVENTS

California, August 12—Second Annual Midsummer Small Bore Tournament. John D. Hembrie, Los Angeles R & R Club, 9214 Graham Ave., Los Angeles.

August 11-12—Southwestern International Pistol Matches. Lt. Ivan L. Johnson, 123 South Figueroa, Los Angeles.

August 18—Southern California Pistol & Revolver League. Jack E. Cornell, 662 Arden Ave., Glendale.

August 19 and September 16—San Francisco Police Monthly Pistol. E. J. Dutil, 324 16th Ave., San Francisco.

September 9—Northern California Championship, at Richmond. C. DeWitt, 3701 Lincoln Ave., Oakland.

Georgia, September 23—Small Bore Rifle Tournament. Gabe G. Jarrard, Box 224, Gainesville.

Illinois, August 5—All-Around Championship Pistol Tournament, at Lincolnwood. Thos. M. Blakemore, 5004 West Huron St., Chicago.

September 9—Sheridan Revolver & Pistol Club Pistol, at Deerfield. Robert Billeter, 936 Wade St., Highland Park.

September 16—Wheaton Small Bore Rifle Tournament. W. H. Blase, 408 Western Ave., Wheaton.

October 7—Small Bore, at Deerfield. Robert Billeter, 936 Wade St., Highland Park.

Indiana, August 19—Second Lead Squirters' Picnic. W. S. Heise, 333 Warren Bldg., Michigan City.

September 9—First Annual "Chief" Match, at Michigan City. J. Y. Murphy, 701 Franklin St., Michigan City.

September 16—Indiana & Kentucky Open State Pistol Tournament. W. C. Watters, 122 W. Chestnut, Louisville.

Iowa, August 12—Iowa State Association Pistol, at Bettendorf. Carl Prevratil, 2018 West 10th Street, Davenport.

Louisiana, September 2-3—Sixth Annual Small Bore Tournament. C. L. Monnot, 3820 Perrier Street, New Orleans.

Maryland, September 9—Western Maryland Pistol. James E. Kelley, Jr., 502 Baltimore Ave., Cumberland.

Michigan, August 19—Royal Oak Midsummer Small Bore. Jules Parnes, 913 S. Knowles St., Royal Oak.

September 23—Ann Arbor Fall Pistol. Capt. C. M. Enkemann, Police Dept., Ann Arbor.

North Carolina, August 25—Greensboro Open Small Bore Tournament. Jack S. King, 413 S. Lindell Rd., Greensboro.

Ohio, August 11-12—Twelfth Annual Fort Harmar Open Small Bore Tournament. H. W. Meiser, 621 7th Street, Marietta.

August 19—Thompson Trophy Small Bore Tournament. Scott A. Edgell, 38 River St., Willoughby.

Pennsylvania, August 5 and September 23—Fort Hand Small Bore Tournament. Geo. W. Rupp, 1029 Hancock Ave., Vandergrift.

August 19—First Mid-season Small Bore Tournament, at Chester. Bettie M. O'Brien, 510 North 52nd St., Philadelphia.

August 19—Annual Philadelphia Area Midsummer Small Bore Tournament, at Cold Point. C. W. Edmunds, Flourtown.

September 2-3—Pennsylvania State Small Bore Championship. R. B. Barry, 407 2nd Ave., Altoona.

September 2—Thirteenth Annual Lehigh Valley Small Bore Tournament. Alfred M. Newhard, 111 E. Susquehanna St., Allentown.

Utah, September 2—Small Bore Tournament, at Fort Douglas. Obed C. Haycock, 1870 Atkin Ave., Salt Lake City.

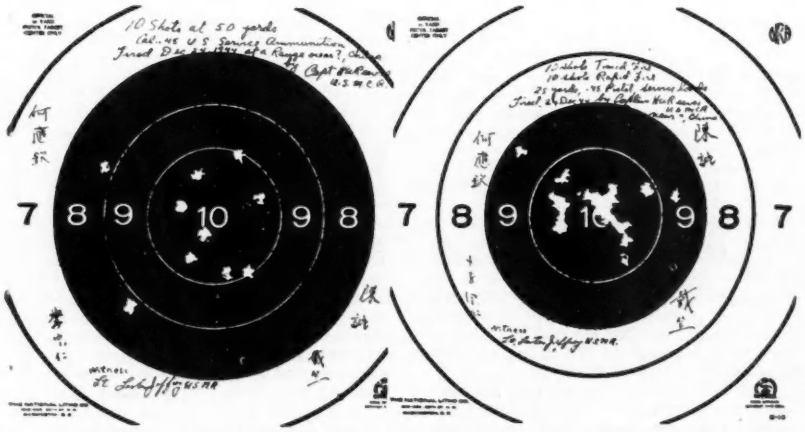
West Virginia, September 2-3—Eighth Annual Pistol Tournament. A. M. Springer, Box 204, Fairmont.

STOLEN GUNS

One .38 Officers' Model, grip adapter, Magnum grips, Serial Number 531998, stolen from car in New Orleans. Reward. Arthur R. Johnson, P. O. Box 1926, San Benito, Texas.

One Colt percussion pocket model, eight-inch barrel, blued finish, perfect condition, .36 caliber on .31 frame, Serial Number 5424. Twenty-five dollar reward for information leading to arrest of thief. J. H. Johnston, 3-02 34th Street, Fair Lawn, New Jersey.

One S&W Military and Police, caliber .38 Special, five-inch barrel, nickelplated, Serial Number 334860. Edward L. Sterling, Sq. G, 146th AAF Bn., Selfridge Field, Michigan.



Capt. Harry Reeves, National Pistol Champion, isn't slipping much, judging by this target mailed from China. We make it 294, two points above the all-time National Match Course record.

Sergeant Thomas Franklin Woodhead

My son, Staff Sergeant Thomas Franklin Woodhead, was killed in action December 10, 1944. He was twenty years old and had been a junior member of the NRA until, on his nineteenth birthday, I gave him a life membership.

I have delayed writing you as I still had some hope that it could not be so; but this week I received his personal effects in a little box and all there was in his pocketbook was his life membership card to NRA. He was so very proud of it and loved the magazine with a sportsman's passion as he did his guns.

He shot in two NRA state matches: One at Knoxville, Tennessee, and one at Greenville, South Carolina. He won some events in each of these matches. We were shooting partners and hunted and fished together for ten years.—W. W. Woodhead, Chattanooga, Tennessee.

J. Henry FitzGerald

With the passing of J. Henry FitzGerald the shooting world has lost a unique and outstanding figure, and thousands of shooters have lost a warm personal friend. "Fitz" was nationally known as a ballistics expert and a crack shot. He was known to thousands of shooters as the man who sat behind the firing line at Perry and, with a file and a few deft movements of his hands, could do

more to make a pistol or revolver "sweet" than most men could do in a well-equipped shop.

Fitz was known also to police officers and departments all over the country as an instructor in handgun marksmanship. He was accepted by police authorities everywhere as a qualified expert on firearms identification and ballistics, and as such had testified in some four hundred trials, including more than a hundred murder cases. Perhaps the best known of these was the Sacco-Vanzetti trial, in which FitzGerald testified that the marks on the bullet test-fired from the Sacco pistol were not the same as those on the bullet which killed the victim.

He was instructor at the Boston Revolver Club, where it is estimated that he taught 20,000 persons how to shoot. He was also the instructor for the Connecticut and New York State Police, was a member of the faculty of the New York Police School, member of the New York State Police Chiefs Association, honorary member of the Texas Rangers. He also served, at various times, as instructor for the state police of Pennsylvania, Maine, Maryland, Delaware, New Jersey, and Virginia; also for the municipal police of Washington, Minneapolis, St. Paul, St. Joseph, Des Moines, Kansas City, Omaha, Louisville, Indianapolis, Montreal, Ottawa, and many other cities.

Fitz was connected with the Colt company since 1918, first in the testing department, later as their ballistics expert. He was sixty-nine years old at the time of his death.

William Runde

Bill Runde died at his home June seventh. His passing removes from the shooting scene in the New York Metropolitan Area one of its most familiar figures and the hardest worker at all our matches.

Bill started working for Western in 1919, but even before that he was in the shooting game as a shooter and a willing worker at the matches in which he fired.

Through the "tough" years in the shooting game, Bill almost singlehandedly kept the sport going in the New York Area. All too often things might have "fallen apart" had it not been for Bill's efforts.

We are glad for one thing: Bill didn't suffer. He was stricken suddenly while driving home from work on Wednesday evening and did not recover consciousness after the initial heart seizure. His last appearance on the line was the previous Sunday when he was "bossing them around" at the Grumman Gun Club Pistol Match.

Edward F. Smith

Edward F. Smith, founder of the Winter Haven Rifle Club, one of the first NRA affiliated clubs in Florida, died May 31, 1945, as the result of a fall while at work as a mason contractor.

Ed was in the first Camp Perry team from Florida and has been active in instruction, promoting shoots, and keeping the club together when the going was tough.

He will be missed on all the Florida ranges where his good nature and friendly rivalry was in evidence.

Colonel Morton C. Mumma

One of the best-known figures in the rifle-shooting world in the period immediately following World War I was Colonel (then Lieutenant Colonel) Morton C. Mumma. He served as Executive Officer at the National Matches and as a Director of the NRA during the period when the civilians were being absorbed into the National Match framework, the Small Arms Firing School was being established as a regular feature of the National Matches, the .22 rifle was crashing the National Match scene and .30 ammunition was improving so rapidly that V-rings had to be installed in the "B" and "C" targets to break up the epidemic of long runs.

A graduate of West Point in the Class of 1900, he served as a Cavalryman in Cuba, the Philippines, and on the Mexican Border. He was attached to the General Staff in Washington during World War I. Born in Bluffton, Iowa, in 1878, he retained an attachment for his native State and served five tours of duty as Professor of Military Science and Tactics at the University of Iowa. He was one of the best-known football officials of the Western Conference.

Retired from the Army in 1929, he became associated with the Sears, Roebuck Company in an important executive capacity and had just finished the task of establishing the Sears, Roebuck facilities in Hawaii at the time of the Japanese attack on Pearl Harbor. Returning to the United States he became a special advisor to the War Production Board, serving in that capacity until a heart attack in 1942 caused him to retire. He settled in Beverly Hills, California, where he died on May 30th, at the age of sixty-seven. One of his three sons, Captain Morton C. Mumma, Jr., U. S. N., is now a member of the Board of Directors of the National Rifle Association. A grandson, Cadet Morton C. Mumma, III, is a student at West Point where his grandfather was buried on June sixth. Colonel Mumma is survived by his widow, three sons, and two daughters.

A. C. Black, Sr.

Mr. A. C. Black, Sr., of Trenton, N. J., met an untimely death. He was sixty-three years of age and had been connected with the Pennsylvania Railroad in Jersey City for forty-two years.

He leaves a widow, a daughter Betty, and a son, A. C. Black, Jr., who is serving his country in the U. S. Navy.

Al Black had been Secretary and Treasurer of the Citizens Rifle and Revolver Club of New Jersey since 1942 and was one of its most enthusiastic supporters.

Robert J. Lafferty

Lt. Robert J. Lafferty of Aurora, Illinois, has been reported killed on Negros Island in the Philippines, May 31.

Lieutenant Lafferty won the NRA National Junior Rifle Championship at Camp Perry during the 1938 National Matches. He held several National Junior Records and was prominent in midwestern shooting circles before his entry into the armed forces.

Thomas A. Davis

Tom Davis was a unique figure in the field of "professional" shooting promotion men. Most men who remain long in this field find that they have, usually unconsciously, done or said something to create hard feelings, distrust, or open enmity on the part of indivdual shooters or whole clubs. Keen competition develops quick tempers. Local pride develops sensitive feelings. Almost alone among his colleagues Tom Davis lived—and died—the friend of all he met, kindly, well-liked, loved by those who knew him best.

Born in New York City, October 9, 1873, Tom was educated in New York's public schools. From 1898 through 1928 he was connected with the Winchester Repeating Arms Co. He was in charge of that company's Washington Office during World War I and, as their military representative, visited Russia, China, Japan, Norway, and Sweden. After the war he managed the Winchester Sportsmen's Headquarters in New York.

From 1929 to 1931 Tom tried his hand at the real estate brokerage business, but in 1931 he returned to the gun business with Abercrombie & Fitch, where he remained until 1934. On March 22, 1934, he took charge of the sale of guns and ammunition at Remington's New York showroom. He also assisted at the more important trap- and rifle-shooting competitions in the United States, Canada, and Bermuda. He was one of the most popular trap-shoot cashiers in America and was a familiar figure in the statistical office at Sea Girt and Camp Ritchie.

An active Mason and Shriner, he was a Past Potentate of Kismet Temple in Brooklyn. His true nature showed itself best in his forty-year interest in New York's crippled children. He had served as a trustee of the House of St. Giles the Cripple and St. Giles Hospital for many years prior to assuming the Superintendency of the latter institution when he finally left Remington and the shooting promotion field in 1938. He died June 11th. He is survived by his widow, Mrs. Laura Rareshide Davis, of 80 Cranberry Street, Brooklyn.

Brigadier General C. M. Easley

The eighteenth American general officer killed in action in this war was the one best known to the American shooting fraternity. A native Texan, "Speck" Easley was a shooter by nature as well as by profession. Alert, keen, good-natured, friendly, but a fighter when the chips were down, he was one of the best-liked and most-respected competitors and team officers in the long history of the National Matches. Assuming the captaincy of the U. S. Infantry Team in 1937 after the Marines had won four consecutive Nationals, "Speck" saw his boys finish third, twenty-eight points behind the Marines and four points behind the Cavalry; but in 1938 he led the Infantry to its first victory in five years by a four-point margin over the Leathernecks. He repeated in 1939 in one of the hardest battles of National Match history, four points up on the Cavalry and six points ahead of the third place Marines. These consecutive victories for the Infantry in 1938-39 marked the only time that the doughboys have won the National Rifle Team match two years in a row. It is doubtful if any achievement in his outstanding career as an Infantryman gave "Speck" quite so much satisfaction!

Born in Thorp Springs, Texas, on July 11, 1891, General Easley graduated from Texas A. & M. in 1917, having served as an enlisted man in the Texas National Guard during the last two of his college years. He was commissioned in the Regular Army late in 1917 and did not get into action overseas in World War I. He served in the Philippines from 1921 to 1924. In 1927 he made his first trip to Camp Perry as a firing member of the Infantry Team. The Infantry won that year by outranking the Marines. Captain Easley's ninety-eight at 1,000 yards contributed materially to the victory. He also won the Scott at 900 yards, finished one point behind the winner in the Individual Palma, thirteenth in the President's, and eighth in the National Individual. In 1930 and 1931, he returned to Perry as a member of the Infantry squad serving as an assistant coach. In 1939 he entered the Army War College and then did a tour of duty on the General Staff in Washington.

He was assigned as Deputy Commander of the 96th Division when it was formed and played a major part in the training which earned the division its title of the "Dead Eye Dick Division." He was the first general officer wounded on Leyte but went back to his role of a "front-line general" as soon as his wound had been dressed. Shortly after the 96th moved against the Shuri line on Okinawa, General Easley made newspaper copy by taking a doughboy's rifle in a forward observation post and killing a Jap in the mouth of a cave 500 yards away. He was killed by machine-gun fire while endeavoring to outflank another machine gun which had just wounded an officer at his side. He is survived by his wife and a son who is an officer on duty in the Philippines.

DOPE BAG ☆ ☆ ☆ Conducted by F. C. NESS

THIS MONTH:

Clearing Foreign Guns · Bull Pup Innovations · Berdon Job · Super .38 Tests · Trying the .300 P.M.V.F. and .270 C.C.C. · Trade Dope

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FOR OVERSEAS GUN COLLECTORS. During the present war there are a great many gun bugs in the service who are making additions to their collection of guns and cartridges, especially those overseas. Whether these arms are of a military type or not, you may run across several difficulties in getting them into the States if you are not familiar with the customs acts governing firearms.

First, you must obtain permission from your commanding officer to purchase or possess foreign firearms. This is generally in agreement if you make it known that they are to be used only for personal collections as souvenirs, or for conversion to target or hunting weapons. Next, you *must* register the gun or guns with your Provost Marshal while they are in your possession.

To prepare the guns for shipment the following steps must be taken:

1. Pack the guns in a strong wooden case. 2. Obtain 3 copies of personal effect forms from your supply or company clerk. These forms must be filled out in full. Keep one copy for personal references, and enclose the remaining two copies in the case with the guns. 3. Before sealing the guns your commanding officer will inspect the case and sign the forms. 4. If you are in a town or city where the services of a customs broker are available, have him fill out the necessary forms giving him the name, serial number, year, and type of gun and where made. Also the cost or how obtained. The charges for this service will not exceed $1.00 American funds. (Customs Brokers will be found in any port city and in almost all of Great Britain and her Colonies.) 5. These forms are then enclosed in a heavy manila envelope and tacked to the outside of the shipping case. You will retain the carbon copy for personal reference. 6. You will then obtain 2 tags from your supply clerk. One, a personal effects shipping tag, the other a customs tag which will also be signed by your commanding officer in the designated place.

The method of shipment will depend upon where you are stationed. But guns can not and will not be accepted for mailing by any post office. They will be shipped either by express, freight or boat. It may sometimes be possible to ship them via Quartermaster Transportation. If you are in a non-combatant zone, your Army Postal Officer can advise you as to shipping. This does not mean you can send them Parcel Post.

I do not have any information concerning the duties on cartridges, but do know that *all* cartridges, shells, etc., must be de-activated by removing powder and primers. They also must be shipped other than Parcel Post. It is advisable to inquire as to available transportation before planning to collect or purchase cartridges, either single specimen or lots.

Upon entering the States your guns will go directly to the Customs Officer nearest your home. Whereupon your family will be notified of their arrival there. It may be necessary that they fill out an application for the importation of firearms. Following is an excerpt of the Tariff Act of 1930,* which will give you a general idea of the rates of duty on firearms.

TARIFF ACT OF 1930

Par. 365. Shotguns, rifles, and combination shotguns and rifles, valued at not more than $5 each, $1.50 each; valued at more than $5 and not more than $10 each, $4 each; valued at more than $10 and not more than $25 each, $6 each; valued at more than $25 and not more than $50 each, $10 each; valued at more than $50 each, 20 per centum ad valorem; and in addition thereto, on all the foregoing, 45 per centum ad valorem; barrels for shotguns and rifles, further advanced in manufacture than rough bored only, $4 each; stocks for shotguns and rifles, wholly or partly manufactured, $5 each; and in addition thereto, on all the foregoing, 50 per centum ad valorem; on all parts of such guns or rifles, and fittings for such stocks or barrels, finished or unfinished, 55 per centum ad valorem: PROVIDED, That all shotguns and rifles imported without a lock or locks or other fittings shall be subject to a duty of $10 each and 55 per centum ad valorem. Shotgun barrels, in single tubes, forged, rough bored, 10 per centum ad valorem.

Par. 366. Pistols and revolvers: Automatic, single-shot, magazine, or revolving, valued at not more than $4 each, $2 each; valued at more than $4 and not more than $8 each, $2.50 each; valued at more than $8 each, $3.50 each; parts thereof and fittings therefor, 50 per centum ad valorem; and in addition thereto, on all the foregoing, 55 per centum ad valorem.

Par. 1723. Muzzle-loading muskets, shotguns, rifles, and parts thereof.

If for any reason you bring your guns with you, your baggage *will* be checked and examined on entry. Bringing your collection with you, upon returning to the United States, is not advisable as your guns may be confiscated until investigation and settlement is made. If for any reason the guns are held by customs, storage charges will accumulate. If they are unclaimed within a year they will be sold at public auction.

My advice is to buy or secure only guns that will be of value to you as collectors' items or those that can be converted to practical target or hunting guns, as the post war market will be flooded with common weapons. If you add the approximate duty charges to the cost of the guns and you feel that you can realize practical value or profit from the deal it is well worth the cost.

As the enclosure No. 33848 of Tariff Act of 1930 is a public document, permission is granted to reprint any part of it. Permission was also granted in a letter to the writer, dated February 24, 1945, from the assistant Deputy Commissioner, Treasury Department, Bureau of Customs. —*Cpl. George R. Kress.*

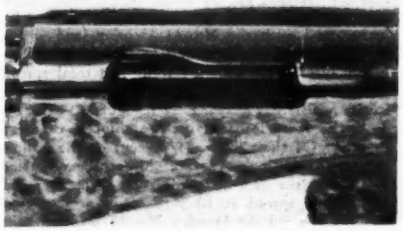
(Par. No. 365) CHANGES IN IMPORT DUTIES SINCE THE PASSAGE OF THE TARIFF ACT OF 1930

Articles	*Rate Changed*	*Modified Rate*
Barrels for shotguns, further advanced in manufacture than rough bored only	$4 each + 50% ad val.	$2 each + 25% ad val.
Stocks for shotguns, wholly or partly manufactured	$5 each + 50% ad val.	$2.50 each + 25% ad val.
Parts of shotguns & fittings for shotgun stocks or barrels, finished or unfinished	55% ad val.	27½% ad val.
Shotguns imported without a lock, or locks or other fittings	$10 each + 55% ad val.	$5 each + 27½% ad val.
Shotgun barrels, in single tubes, forged, rough bored	10% ad val.	5% ad val.
May 1, 1935; Belgium (T. D. 47600)		
Shotguns:		
Valued at not more than $5 each	$1.50 + 45% ad val.	75¢ each + 22½% ad val.
Valued at more than $5 and not more than $10 each	$4 each + 45% ad val.	$2 each + 22½% ad val.
Valued at more than $10 and not more than $25 each	$6 each + 45% ad val.	$3 each + 22½% ad val.
Valued at more than $25 and not more than $50 each	$10 each + 45% ad val.	$5 each + 22½% ad val.
Valued at more than $50 each	65% ad val.	32½% ad val.
May 1, 1935; Belgium (T. D. 47600). Jan. 1, 1939; United Kingdom (T. D. 49753).		
Rifles valued at more than $50 each	65% ad val.	32½% ad val.
Jan. 1, 1939; United Kingdom (T. D. 49753).		

TAYLOR'S CREATIONS

In the June, 1944 Dope Bag was an article entitled "Your Bull Pup May Bite You." This article contained a picture of yours truly and mentioned a guard which I had made and also a Bull Pup which I constructed from a .22 High Standard pistol.

I am enclosing two pictures of the Enfield .30-'06 rifle with a 26-inch barrel and with what I believe is a unique stock, in that it is a short Sporter type rather than the usual full-length stock. The mount is different, as it is a ring reamed to the size of the barrel sweated on and there is no chance whatever of the mount being moved. The telescope with the clamps attached can be lifted clear out of the mount without disturbing the mount or the telescope. In this way the scope can be moved up or down as desired, in order to properly adjust the elevation and can be locked permanently with small setscrews which are located near the top of the mount, so that the scope may be adjusted in the mount without too much changing of the internal adjustment of the scope.



Taylor's Bull Pup Shield

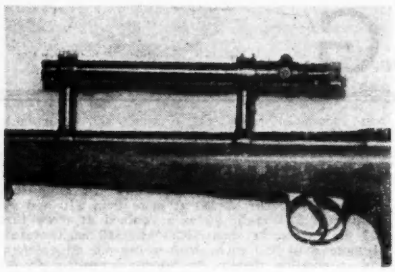
I am also enclosing a close-up picture of the guard mentioned in your article, and which has saved the writer a couple of bad burns.

There are also two pictures of the High Standard Pistol, which is made into a .22 automatic rifle. The first picture shows the rifle assembled with a 24-inch barrel. This is a very handy and light gun and it operates per-

fectly. The rear sight folds back against the barrel when not in use and has the adjustable aperture. There is one bolt only which holds the gun in the stock, so that in about 10 minutes the gun can be switched from a pistol to a rifle.

The other shows the gun taken down and the guard, which is attached over the action of the pistol so that the face will not come in contact with the moving parts when fired. The front sight is adjustable for windage and the rear is adjustable for elevation.

With the long pistol barrel attached, you have a target handgun and, with a short barrel attached, you have a pocket gun, whereas if you want to, you can easily make the pistol into a good automatic hunting gun.—*Malcolm A. Taylor.*



Taylor's Scope Mount

Pistol Pup Assembled

BERDON ACTION JOBS. In the past few months we have received several letters, from scattered sections of the country, all praising the action work of A. E. Berdon on single-shot rifles and on handguns, particularly his accuracy job on the .45 pistol. He has not worked on our own .45 National Match Colt, but he improved the pull on our .22 Ace pistol, recently, and he improved the accuracy of our Super .38 National Match pistol to an appreciable degree.

That Super .38 simply would not shoot from any kind of rest position with high-velocity loads. From our two-hand body rest, the 50-yard, 10-shot groups ran about 13 inches spread. Disgusted with our failure to get any good groups, I tried it with one hand standing, and was surprised to get an average spread of 7 inches at the same range. L. L. McDonie worked it over and improved the accuracy with our handloads, but the high-velocity loads gave groups nearly as big as formerly from rest. With the same factory loads, these 10-shot 50-yard groups were: 11.10 and 9.65 inches. The latter had 8 shots in 6.37 inches, which was encouraging.

We then tried the Potter machine rest and got 13.20 inches spread. A month later, after improving our handload groups with the aid of the Potter rest, we tried the same factory load again and got 8.94 inches, with 9 in 5.75 inches, which was considerably better. A milder factory load, tried with the Potter, gave 10-shot groups of 6.90 and 5.82 inches. The former had 8 shots in 4.68 inches and the latter, 9 shots in 3.72 inches. The King Super Grouper bushing was tried in the same pistol with the same high-velocity load, and the Potter rest gave a group of 8.04 inches with 8 shots in 4.82 inches. This raised our hopes, back in 1940, but subsequent results, including those given above, were no better than the old body-rest average, and we went back to our lead-bullet handloads.

Using the B. & M. 125-grain bullet No. 359125. 6.6 grains Unique made an 18-inch group, and 4.7 grains Bullseye spread these bullets more than 15 inches at 50 yards from the Potter rest. Cutting the load to 4.4 grains Bullseye and Ipco wads, we got all of them in 5.30 inches with all but one in 3.80 inches. Leaving out the wad, this load averaged 6.61 inches and one of its three groups had 9 shots in less than 3 inches. A further cut to 4.0 grains reduced the average spread to 5.66 inches, and 3.5 grains Bullseye averaged 5.11 inches, two groups of this latter load having 9 shots in 3 inches or less. A further reduction to 3.0 grains increased the spread to 7.75 inches with the best 8 shots in 5.65 inches.

We tried the factory jacketed bullet with 3.0 grains Bullseye, 5.6 grains No. 5, 4.6 grains No. 6, and 7.6 grains Unique, and the 10-shot groups ranged from 7.05 inches to 7.95 inches. With Hensley's No. 39 round-nose 158-grain lead bullet we got inconsistent groups of 3.80 and 7.92 inches. With the 155-grain round-nose and the same charge, of 3.0 grains Bullseye, we got 7.90 inches. Of all loads tried with the 149-grain Rector bullet and Bullseye the best were 3.0 grains with 10 in 6.85 and 8 in 5.10 inches, and with 3.3 grains which put a dozen shots in 6.35 inches and 11 in less than 5 inches. At this point, we tried some heavy handloads of Unique with jacketed and lead-alloy bullets and cracked the grip holder of the Potter rest. With other handguns we had had some good groups with this rest, but believed the Super .38 Colt to be a peculiar gun better adapted to two-hand body-rest testing, and we used the latter method for all subsequent testing of this gun.

From body rest, the high-velocity load now averaged 10.38 inches. The Rector semi-wadcutter with 3.3 grains Bullseye made 9.93 inches with 8 in 7 inches even. The B. & M. 125-grain with 6.6 grains Unique and Ipco wads made 7.70 inches, while 4.4 grains Bullseye without wads put the only 5 shots tried into 6.20 inches. Later, or just before shipping the gun to Berdon, we tried from 2.5 to 3.5 grains of Bullseye behind the 146-grain Hensley bullet No. 61, sized .356 and also .358 diameter. The light load would not function and the next load would not keep the slide back on the last shot. The heaviest load failed to keep it back only one time. The only accurate load was 3.0 grains with the .356-inch bullet, all other loads shooting wildly. That most accurate load put 7 in 3.6 inches, which is normal for this rest position, and all ten in 6.75 inches.

When the gun came back from Berdon, the high-velocity load put 10 shots in 5.80 inches with 9 in 4.62 inches. The jacketed bullet with 4.1 grains No. 6 made a group of 5.48 inches with 8 in 4.52 inches. That same load of 4.4 grains Bullseye now put its five B. & M. 125-grain bullets into 3.85 inches. In each case the group was not fully 60 percent of its former size, as Berdon's adjustments of this pistol had reduced the spread of these loads nearly 50 percent. The same was true of the old load with the Rector (a modified-nose version of the Bond Ness) which now grouped in less than 4 inches with 9 in 3.25 inches, and with the No. 61 Hensley load which now made 4.10 inches with 8 in 3.50 inches. The grand average for all these loads is a total spread of 4.88 inches after Berdon's barrel lifting, against its immediately preceding average of 8.32 inches with the same loads before we shipped the gun to him. Of these loads, 75 percent of the bullets averaged 5.66 inches before shipment, and after his job on the gun 80 percent of them averaged 3.78 inches spread at 50 yards.

We also tried the Hensley No. 50 wadcutter in .356 diameter with 3.0 grains Bullseye and got a group of 5.80 inches with 7 in 3.76 inches. Berdon suggested leaving off the heavy crimp to let the mouth of the case serve as a chamber stop for a more uniform seating depth or headspacing in the barrel. We tried it, but with no improvement in accuracy. The No. 61 bullet was used in .356 diameter, and the best loads were 3.3 grains and 3.7 grains Bullseye with groups of 5.20 and 6.12 inches, respectively, and with 80 percent in 3.23 and 3.60 inches. In all this testing of lead-alloy loads, only a slight leading tended to develop just ahead of the chamber. The very best load, of 3.0 grains Bullseye, was tried with this bullet using a very light crimp, and 90 percent of each group went into 3.68 inches or less, at 50 yards. The four 10-shot groups measured 4.52, 4.00, 4.90, and 3.48 inches. From this position we anticipate an error of aim of 1½ inches with such guns, and an equal human error in holding and shooting, which would indicate a spread of 3 inches as the optimo group. In fact, we feel that a spread of 3.50 inches indicates very fine accuracy for load and gun.

* * *

WE TRY THE P.M.V.F. (C.C.C.) It may be true that "curiosity killed the cat," but it is certainly true that the curiosity of our shooters and experimenters has given life to a great number of wildcats. One which has intrigued our own curiosity, above all others, is the Powell-Miller-Venturried-Freebored wildcat, now bearing also the patent name, Controlled Combustion Chambrage. Finally, after publishing a number of reports on results obtained with this custom cartridge, we sent a Model 70 .270 Winchester and a Model 1917 Niedner .300 Magnum rifle to Vard Inc. for the advertised conversion job. After waiting in vain for months, we learned the two rifles had been turned over to the Hollywood Gun Shop for the work, on March 15 this year. They were to be, presumably, the first two jobs turned out by the new concern, but they did not come back to Washington until the end of the first week in June. The work appeared to be very fine, and there were new sizing dies for our Pacific Reloader, minus one important shell holder.

We found that the Winchester stock needed a little refining of its bedding, but that the heavy Bishop beavertail target stock had warped badly, making it necessary to rebed the receiver and barrel of the .300 P.M.V.F. The belted cases supplied by Mr. Powell for this rifle were fine, and having them helped us to get started with the shooting while waiting for the missing shell holder, which latter would be necessary later for full-length resizing of the fired cases. The first loads fired in both rifles blew their cases out beautifully to full-size chamber shape. Sixty of the belted cases formed by E. Baden Powell (.375 H.&H. Super-X) were fired with the M1 boattail and about 12½ per cent of them cracked, leaving 52 perfectly formed cases. The seven that cracked at the neck can be cut off and reformed for our shortened .250 Ackley Magnum when it comes. Those twenty cases fired with 63 grains No. 4064 and 74 grains No. 4350 came through without cracking, but we lost 4 out of the twenty fired with 68 grains No. 4064 and 3 out of the twenty fired with only 72 grains No. 4350 powder.

Providently, I had obtained a lot of fired .300 H.&H. Magnum cases from J. W. Landon, as I anticipated a considerable mortality or loss in forming and firing them. Landon reported finding appreciably more brass in the head portion of these belted cases than in the .30 Newton cases, presumed to be superior until a direct cross-sectional comparison revealed the truth. Landon's assorted cases included Super-X, also Winchester, Remington, and Peters makes, having an average web thickness of .071 inch except one lot which miked as low as .010 inch. But all were thicker in both web and wall than any samples from his

lot of .30 Newton cases. Since our .300 P.M.V.F. will handle factory ammunition we fired five of each of the six lots of Landon .300 Magnum cases using 72 grains of No. 4350 and the M1 bullet with the R.A. No. 9½ primer and lost only 7 out of the thirty tried. Five broke in the body, indicating the weakening effect of mercuric primers, two split at the shoulder, and one primer was punctured. That would indicate an expected loss of 25 per cent in forming fired cases, or just twice the mortality rate of new cases. Exactly one half of those tried were of Winchester and Peters make, and all of these came through the forming process without any loss. Subsequent casualties may develop, such as expanded primer pockets from extreme test loads, or eliminations on account of off-axis or oversize flash holes, or other unforeseen abnormalities.

While we have not been particularly impressed with any conversion of the big belted cases to .22 caliber, nor with those in .25 caliber that require abnormally large loads of powder, we have been interested in obtaining some first-hand experience with the much-discussed C.C.C. or P.M.V.F. in .270 and .30 calibers. E. C. Boswell had trouble with bullet fit in the oversize bore of his .300 P.M.V.F. and finally solved it with the .311-inch, 216-grain, 7.65 mm., R.A., soft-point bullet, which, he says, has a stainless steel jacket. His recent groups fired with this bullet and full-power loads, at 125 yards, have been appreciably smaller than those previously reported, and the last one, with 61.5 grains No. 4350, put them in 1½ inches at 75 yards except for one flier. He said this load showed a 15-inch drop between 125 and 300 yards. Others have reported better results, and probably have better facilities than Boswell.

In addition to the enthusiastic report from Lt. Learned, already published in the February Dope Bag, I have heard from M. M. Schmidt, who says that Dr. Niley's .300 P.M.V.F. on the Model 70 action is giving him minute-of-angle groups. Schmidt's own rifle employs the same action with a Winchester Target barrel, and he calls it a 500-yard chuck gun. His load is 75 grains No. 4064 and his best bullet is the 180-grain Western Match boattail, although the M1 bullet "will shoot into 3 inches at 300 yards" with this load. The five-shot group he sent me measures 3¼ inches between centers, but he used 3 Silvertips and 2 Western O.P.E. bullets in making it. For the same 300-yard zero, with the 150-grain M2 bullet he finds it necessary to increase the charge to 80 grains of the same powder. Schmidt still has 35 of his original 40 cases, although he has fired 400 "hot loads" in them. He started out with Ralph Miller and followed him to Vard, Inc., and is now with Hollywood Gun Shop, where he did the work on my two rifles.

The Hollywood Gun Shop converted a customer's Springfield to their .30-'06 C.C.C. chamber and had it tested for muzzle velocity on a Government range, the basic charge being 58 grains No. 4064. This load gave the Western 180-grain bullet 3021 and 3023 f.s., and the Peters bullet, 3011 and 3015 f.s., while the velocities with the M1 bullet ran 3000, 3005, 3002, and 3000 f.s. This load gave the 150-grain M2 bullet 3083, 3213, 3195, and 3208 f.s., while 59 grains gave it 3290 and 3283 f.s. Excessive pressures were indicated when the charge was increased to 60 grains, whereas 59-grain loads showed such signs with the 180-grain bullets. E. Baden Powell uses 58 grains and the 180-grain Match bullet with W.R.A. No. 120 primers in his C.C.C. Bullgun, and says it requires only 28 minutes elevation above the 100-yard zero for 1000 yards, his .300 P.M.V.F. taking about 4½ minutes less elevation for the same distance. His .30-'06 C.C.C. made highest score in a match out there, and a month later it took the top spot. Another month later it won again with a 16-X possible, and his .300 P.M.V.F. took second and third places with two different competitors using it. Before mine was shipped he tried it with 75 and 83 grains of No. 4064 and the No. 120 primer behind the 180-grain bullet without developing pressure signs on the primer or in extraction. Then he tried his most accurate load of 79 grains No. 4350 behind the 180-grain Match boattail and got a 2-inch spread. His .30-'06 C.C.C. and Match load gave a 1½-inch group when fired in direct comparison. The most recent report from Mr. Powell says, "Took the prone medal at the Free Rifle shoot Sunday before last with above reduced load (30 grains No. 4759 and 180-grain Match bullet). Of the 20 other entries most were .22's. It was windy enough to give the .22's (Swift and Varminter types) nines in every string. I never held outside the X-ring (20-X scope) and the wind didn't seem to make much difference. I lost the sitting by pulling a foolish 8."

Regarding the necked down .375 H. & H. Magnum cases Powell sent us, he said he loads these with the No. 120 primer and either 73 grains No. 4064 and the 150-grain bullet or with 68 grains and the 180-grain Match, the former shooting into 2 minutes spread, and the latter, into 1½ minutes, in 10-shot strings. The latter load requires 26 minutes elevation over 1000 yards. Then the fired cases are trimmed on the Smiley tool, to take out the crimp groove but no more, and then chamfered inside the mouth on the Wilson hand reamer. These are loaded, as per above, with his Match load of 79 grains No. 4350 and these require about 23 minutes elevation over 1000 yards. Some of the cases are primed with the F.A. No. 70 for his Free Rifle load of No. 4759. See above. For his hunting load, he reams out the pockets and primes with the Winchester No. 225 cannon primer and drills the point of the 180-grain Match boattail with a hole of 1/32 inch to make a 175-grain pointed open point. His load is 80 grains No. 4350, and this combination requires 25 minutes elevation over 1000 yards. His Match load averages under 2 minutes of spread, with 8 of each ten shots in 1¼ minutes. We found that the same loads worked as well in our .300 P.M.V.F. as any loads we could develop for it.

When we blew out our Powell cases with the different loads behind our M1 bullets, those we tried at 100 yards shot into well under 2 minutes of spread, the average for three different loads being 1.29 inches. We also had groups as small as 2.82 inches at 200 yards, 5.65 inches at 300 yards, and 8.92 inches at 400 yards. We used the 8-X Lyman Jr. scope on our shortened Niedner barrel and based our long-range impacts on a zero an inch above aim at 100 yards. On this basis, 63 grains of No. 4064 sent our bullets 1.64 inches low at 200 yards, and 68 grains sent them 1.05 inches low at that range, 7.05 inches low at 300 yards, and 19.10 inches low at 400 yards. Another load, of 72 grains No. 4350, started these M1 bullets at .61 minute of angle higher angle of departure making the impact 1.30 inches high at 200 yards, 2.45 inches low at 300 yards, and 14.55 inches below aim at 400 yards. A little lumpy fouling showed on the lands where they began at the end of the free boring, and this was removed with a brass brush after every 20 rounds.

In the formed cases, we tried from 76 to 81.0 grains of No. 4350 and the R.A. No. 9½ primer, using the same M1 bullets with and without Ipco wads. While we could use 80.0 grains with the wads safely, 81.0 grains without wads began to show pressure indications. The most accurate load, by an appreciable margin, was 79.0 grains without wads, and we adopted that load. It put four shots in 1.87 inches at 200 yards and the wilder remaining one enlarged the group to only 3.18 inches. The shooting was from prone with shooting stick. Our experience agreed with Powell's findings and both indicated the importance of finding the right loads, or load, for the temperamental .300 P.M.V.F. The recoil was different in nature and much milder in effect as compared with what it had been in this same rifle in its original .300 H. & H. Magnum caliber and loading. Whereas it had been much greater than the worst .30-'06 we had ever tried now it seemed milder than the best .30-'06 rifle in that respect. However, from the shooting bench, the recoil effect was more noticeable and that is true of most powerful sporting rifles. At any rate, we found the recoil to be pronouncedly modified as Mr. Powell had predicted.

At the same time, the increased power of the load was indicated by the flattest trajectory we had seen over any range with the M1 bullet and the flattest over 400 yards with any rifle. At that range, our load put its five shots into 5.83 inches and at 100 yards, into 1.80 inches. With the impact an inch high at 100 yards it was .15 inch low at 200 yards, 4.15 inches low at 300 yards, 12.85 inches low at 400 yards, and 27.85 inches below aim at 500 yards. With nearly 6½ minutes net angle of departure the indicated drop below the extended bore line was 1.49 inches at 100 yards, 5.73 inches at 200 yards, 14.82 inches at 300 yards, 27.61 inches at 400 yards, and 45.90 inches drop over our longest range, 500 yards.

The four major parts of Taylor's Pistol Pup

The old throat-eroded, 30-inch, Niedner, target barrel was cut off two inches before rechambering. For its present 28-inch length, and from the factory figures for the factory .300 Magnum load and 180-grain boattail, the drop indicated is 1.72 inches at 100 yards, 8.20 inches at 200 yards, 20.00 inches at 300 yards, 38.68 inches at 400 yards, and 65.20 inches over 500 yards. With the same caliber and type of bullet, weighing about 7 grains less, our .300 P.M.V.F. showed about 5 inches less drop over 300 yards, 11 inches less over 400 yards, and nearly 20 inches less over 500 yards.

After trying the .300 P.M.V.F. in the field, I can understand why M. M. Schmidt calls his "minute-of-angle" rifle a "500-yard chuck rifle." However, I would class it as a long-range big-game gun. Chucks or coyotes nearer than 400 yards could be more economically bagged with some lesser load. At 400 yards I held the center dot on top of an erect chuck and the bullet landed a foot low, in exact agreement with our trajectory dope. This was borne out at 500 yards when I held 8 inches into the wind and 2 feet high, as nearly as I could judge. Our dope gave a 30-inch drop at that range, and the bullet landed about 6 inches under the chuck, which impact checked exactly. Two difficulties are involved, and either would make results uncertain. One is finding chucks at the known distance of 500 yards, or knowing the range exactly, and the other is holding the required allowance over the target with an indefinite aiming point. It is easy to misjudge 6 inches in holding off, and that is more than enough to cause a miss on a chuck or coyote with everything else exactly right. On less critical targets, such as deer or antelope, both my first shots, at 400 and 500 yards, would have been sure hits and kills. I am confident of the killing power after noting the vicious impact of the M1 bullet at long range, and which indicated a very high remaining velocity. It made the .270 P.M.V.F. (no slouch in itself) seem picayune in comparison. At the same time, I was unable to detect any difference in the recoil of the two P.M.V.F. rifles, both of which are equipped with Bishop stocks.

Our Model 70 .270 Winchester had seen considerable use, but the barrel was cut off and set back not more than 3/16 inch for the .270 P.M.V.F. Mr. Corcoran got a group of under 2 inches with it using factory .270 Winchester ammunition. Mr. Powell tried from 56 to 60 grains of No. 4064 with the 130-grain bullet, finding no pressure indications with the light load. Ten of these made a 3-inch vertical group at 100 yards. We tried from 52 to 57.5 grains No. 4064 in fired W.R.A. cases with the 120-grain Barnes bullet. The light and heavy loads were all right, but we had several primer leaks with 54 and 56 grains of powder. All these cases formed well without cracking, and 40 rounds more, with factory ammunition, gave us 80 formed cases and no losses. Our best group with the 120-grain Barnes was five in 3.67 inches at 200 yards with 4 in 1.08 inches. The load was 56 grains No. 4064 in expanded cases. Later, we tried from 55 to 58 grains behind this bullet, with and without Ipco wads, and the heavy load was best, making 3.92 inches at 200 yards without wads and 3.87 inches with wads. We adopted the latter load, eventually.

In the meantime, we experimented with packing the forestock with paper and cardboard strips near the tip. The first time, one paper strip reduced the group 1¼ inches. This stunt reduced the spread of another load only ¼ inch, and a cardboard strip had no effect on a third load which spread about 3¼ inches at 200 yards when tried either way. In the final check, we used one or two strips of tagboard in five different ways with 58 grains No. 4064 and got the smallest group, or 3.27 inches at 200 yards, without taping or packing. Consequently, we did our testing with the plain unadulterated bedding, or as we had started.

Back in 1937, I had taken this rifle to Canada for some field testing and tried it up to 500 yards on the target and later killed a chuck at 600 yards. All the shooting was with the, then new, Winchester 100-grain cartridge, and using my Fecker 8-X target scope on the rifle. I had saved a box of those loads and, wanting to try them in the new C.C.C. chamber, we now placed the same Fecker scope on the barrel. There is a short freebore ahead of the chamber with the location of the lands just showing as faint tracings. These are more distinct now, as they have become roughened and blackened after firing a couple hundred rounds of heavy loads. In view of this freebore we were surprised to get relatively high velocity with the same old loads as evidenced by the trajectories up to 400 yards.

Now, with the Western Super-X 100-grain load in the P.M.V.F. chamber and the zero an inch above aim at 100 yards, our impacts were .75 inch below aim at 200 yards, 7.38 inches low at 300 yards, and 25.00 inches low at 400 yards. On this same basis, the former impacts with this load, in the new factory barrel and chamber, had been 2.00 inches low at 200 yards, 8.00 inches low at 300 yards, 22.00 inches low at 400 yards, and 36.00 inches below aim at 500 yards. The best group with the fresh ammunition when the barrel was new was five shots in 3.95 inches at 200 yards, and then there were groups of 2.25, 2.24, and 2.05 inches at 100 yards. Now, in C.C.C. form this same old load made 2.12 inches at 100 yards and it put five shots in 8.52 inches at 400 yards. The other impact groups were rather poor, although fired the same way.

The Western Super-X O.P.E. boattail factory load with 130-grain bullet was also tried at the same time in the P.M.V.F. chamber. We found the net angle of departure to be .76 minutes higher with this bullet, and its impacts, on the same basis, were 1.10 inches low at 200 yards, 8.00 inches low at 300 yards, and 22.88 inches below aim at 400 yards. This shooting indicated a drop below the extended bore line of 2.74 inches at 100 yards, 10.21 at 200 yards, 22.48 inches at 300 yards, and 42.73 inches over 400 yards. Since the factory trajectories for this load indicate a drop of 2.00 inches over 100 yards, 4.00 inches over 200 yards, and 18.00 inches over 300 yards, the relative drop dope we obtained with the freebored barrel seems more reasonable for the 130-grain load than do the previously quoted relative impacts we obtained with the 100-grain load. The groups obtained with the 130-grain load also were more normal. The 5-shot impact groups were 2.52 inches at 200 yards, 3.88 inches at 300 yards, and 6.80 inches at 400 yards.

With the Barnes 120-grain bullet, a modified load of 51 grains No. 4064 gave an impact only 1.92 inches below aim at 200 yards (from an inch high at 100 yards) and made a group of 3.71 inches. Our adopted load for this bullet is 58 grains of the same powder, and it put the bullet .30 inch above aim at 200 yards, 2.55 inches low at 300 yards, 20.02 inches low at 400 yards, and 33.53 inches below aim at 500 yards. That is a very pleasing trajectory, as it compares favorably with that of the 55-grain pointed bullet in the .220 Swift at 400 yards, and more so at 300 yards. In order to preserve this old barrel as long as possible, we intend to discontinue group shooting and do the bulk of any further testing in the field, on game and varmints. The impact groups were fair, going into 2.74 inches at 100 yards and into 11.88 inches at 500 yards.

TRADE DOPE

Herbert Longo has advised us he is joining the firm of Ackley, Demiller, and Koozer, in Trinidad, Colorado. His specialty will be barrel fitting and chambering, including his .25-caliber wildcat on the Hornet case, his .405 on the belted case, and his .446 on the .348 Winchester.

* * *

T. W. Hildemann, formerly of Frenchtown, Montana, is now in a hospital in Rochester, Minnesota, suffering a serious illness which has forced him to give up all etching and stocking work.

* * *

A. E. Mashburn has been forced to move his shop out of the mile-high altitude of Denver, and should now be addressed, Mashburn Arms Co., 1220 N. Blackweldin, Oklahoma City, Okla., where work is being resumed. He expects to be caught up on all orders in the near future.

* * *

"513,880 Garands" were made by Winchester between September 1940 and June 30 this year, when the Government contract was terminated. The resumption of sporting arms manufacture, halted in February 1942, will be announced after it has been decided which types and models shall come first.

* * *

Eric Johnson is back in the custom barrel business again, well equipped with modern machines, at 115 Carleton Street, Hamden, Conn. He resumed barrel making in June. Formerly he was with High Standard and, more recently, with Standard Products.

* * *

Moffat & Jewett, of 1221 Evergreen, Burbank, Calif., continues the case-forming service on the .22-.250, .250 Savage, .300 Savage, and .257 Roberts, formerly conducted by C. G. Moffat of North Hollywood before Moffat was inducted into the Service, on June 6th this year. See Mr. Jewett's ad beginning in the July issue.

* * *

Thomas Woroniecki, erstwhile dealer in antiques and rare guns at 47 West 44th Street, N. Y., was inducted into the Armed Forces on June 13th, and informs us he has refunded all money sent to him for his 1945 catalogue. He invites anyone overlooked to write him, but asks all others to refrain as he can no longer reply to mail.

* * *

Southwest Cutlery & Mfg. Co., of Montibello, Calif., announce excellent progress in obtaining materials, catching up with delayed orders, and in stocking dealers since they have taken over the making and selling of "Pointer Stocks" formerly made and sold by Walter Murad, who is with the new firm in the capacity of a designer.

* * *

Al Freeland, the wellknown scope-stand man of Rock Island, advises us that increased defense work has curtailed his service to shooters of arm cuffs, rebluing, and other items.

* * *

The Warner Products Co., formerly of Norwich, Conn., have moved to Baldwinsville, N. Y., where they are resuming the manufacture of specialties for dogs and for sportsmen, with additional lines scheduled for postwar appearance.

THE ARMS CHEST

GENERAL REQUIREMENTS APPLICABLE TO CLASSIFIED ADVERTISING

1. Transactions Based on Good Faith: ARMS CHEST transactions are based on good faith and mutual satisfaction. Deliberate misrepresentation, disregard of usual business ethics or the attempt to circumvent these general requirements, when brought to our attention, will result in refusal of further advertising and might result in disbarment from the NRA in the case of members.

2. All Orders Subject to These Conditions: WE reserve the right to edit all copy to conform with our standards and to reject or discontinue any advertisement which we consider undesirable.

3. Who May Advertise: The ARMS CHEST is an open market trading post. Any individual or firm whose advertisement and methods of doing business meet our requirements may advertise their goods or services.

4. Rates: All classified advertisements must be accompanied by remittance. The rate is 15 cents per word including name and address—minimum charge $2.00.

5. How to Count Numerals, Etc.: Groups of figures are counted as one word (example: .30-30, 250-3000, $150.00, $1.50). Abbreviations consisting of initials or single characters likewise are counted as one word (example: W. H. Smith; H.B., meaning heavy barrel; HP., meaning highpower). Hyphenated words are counted as two words (examples: 20-gauge, pearl-handled, no-slip).

6. "For Sale" Ads Must State Price: A specific price must be stated on all FOR SALE ads—except that the phrase "write for calalog" may be used when listing real estate or merchandise in quantities.

7. Firearms for Sale or Trade Must Be Defined: The *condition* of every gun (including essential parts) advertised for sale or trade, *must* be specified according to *NRA standards*, as follows: PERFECT—meaning factory condition; EXCELLENT—meaning new condition, implying negligible amount of use; VERY GOOD—meaning practically new condition, implying little use, with no appreciable bore wear and only minor surface scratches or wear; GOOD—meaning moderate use with some finish worn off, only moderate bore wear, with no pits and nothing worse than a little roughness in the bore; FAIR—meaning no parts missing necessary to use of gun, reasonable wear inside and out, nothing worse than minor pits in steel or stock, gun sufficiently accurate for hunting. POOR—meaning marred appearance and pitted or badly worn bore.

8. Non-Specific Phrases Barred: Phrases such as "highest" or "top prices paid," as well as any other so-called "auction-type" phrases are not acceptable. The terms "fair price paid" or "state price wanted" may be used.

9. Blind Ads Not Acceptable: Box number or blind ads will not be accepted. Give your complete name and address, to insure prompt delivery of all mail or telegraph replies.

10. Requesting Privilege of Examination: Purchasers desirous of examining merchandise before acceptance should request shipment by express C.O.D. with examination privilege. This procedure permits the purchaser to inspect the merchandise *in local express office* and authorized the express company to return unsatisfactory merchandise at shipper's expense.

11. OPA Ceiling Prices: An agency of the Federal government has legally fixed the prices of various commodities, including dealer and individual sales of ammunition (except handloads), and firearms, both new and used, except guns personally owned by individuals, acquired for their own personal use. Attempts to evade ceiling prices are violations of Federal statutes. It is physically impossible for us to ascertain whether or not firearms advertised in the Arms Chest are "personally owned" or to check advertised prices against legal ceiling prices. This is the responsibility of the advertiser, and advertisements offering to buy or sell merchandise at higher than legal prices will, when called to our attention, subject the advertiser to the penalties mentioned in paragraph 1.

12. Federal Explosives Act Defined: Under the Federal Explosives Act of 1941 all buyers, sellers, and possessors of gunpowder (not complete cartridges) must be licensed. Explosives licenses are usually obtainable from county court clerks. Purchasers must submit such licenses or a certified copy thereof to the seller at time of sale.

13. "Outlawed" Firearms Defined: The sale of certain firearms is outlawed by Federal law unless handled by a Federally licensed dealer. These included machine or submachine guns; sawed-off rifles and shotguns with barrels of 18 inches or less, and Mauser and Luger auto pistols *with holster stocks*.

14. Responsibility for Illegible Copy: Type or print advertisement plainly, as we can not be responsible for errors due to illegible writing.

15. Closing Date: The closing date of all advertisements is the 5th of the month preceding month of issue.

FOR SALE

NEW SHOTGUNS FOR IMMEDIATE DELIVERY! 12 gauge, 30" H&R single barrel, chambered for maximum loads. Mail $14.55 check, money order (or $2.50 deposit on C.O.D.'s). Klein's Sporting Goods, 505RE, South Halsted, Chicago.

TARGET SCOPES, HUNTING SCOPES, SCOPE mounts, reloading tools, powder, bullets, latest Ideal handbooks, postpaid 50¢. Stamp for folder. Louis Rinquette, Grants Pass, Oregon. 8-45

SEND THREE CENT STAMP FOR LIST OF modern and obsolete cartridges. Kimball Arms Company, Woburn, Mass. tf

THE REVOLVER TIMING RECORD—A 10 INCH RCA-Victor phonograph record, practice timed and rapid fire anywhere, by yourself, nothing to watch—just listen, for dry shooting, basement and outdoor ranges, one side 10 second timing, other side 20 second timing, plays on any phonograph, $1.50 postpaid. The Original Sight-Exchange, Box J, Paoli, Penna. 2-46

LARGE ASSORTMENT ANTIQUE FIREARMS, swords, powder horns and flasks. Stephen Van Rensselaer, Mt. Kemble Avenue, Morristown, New Jersey. 8-45

FOR SALE—COLT, REMINGTON AND OTHER cap and ball revolvers, all calibers, muzzle loading long guns, moulds and flasks. List 10¢ in stamps. E. C. Ward, 406 Wilcox Bldg., Los Angeles 12, Calif. 9-45

PATENT PROTECTION. INFORMATION AND invention record free. Randolph & Beavers, 370 Columbian Bldg., Washington, D. C. 12-45

FOR SALE—LARGE COLLECTION OF AMERIcan and European Antique Arms, send 25 cents in coin for our 12th edition catalog, we buy whole collections or single pieces. Fair prices paid. Kimball Arms Company, Woburn, Mass. tf

GIANT CHINCHILLA RABBITS, VALUABLE fur, delicious meat, easily raised, pleasant pastime, tremendous demand, small investment, large profit. Willow Farm, R82, Sellersville, Penna. tf

CASWELL TARGET CARRIERS GIVE THE shooter every possible point because they hold the target steady and require no exertion to operate, fully equipped with speedy ball-bearing pulley wheels and target holders for every type of indoor paper rifle or pistol targets. Caswell Target Carriers, Anoka, Minnesota. tf

REVOLVERS, MINERALS, STAMPS, COINS, glass, Indian relics, catalog 5¢. Cowboy Lemly, Las Cruces, New Mexico. tf

REWARD—CASH OR GUNS FOR YOUR HELP in locating purchaseable Antique Firearms Collections. Prompt, honorable dealing. James Serven, Santa Ana, Calif. tf

INDIAN RELICS, CONFEDERATE BILLS, coins, minerals, gems, fossils, crystals, illustrated catalog 5¢. 100 ancient arrowheads $3.00. H. Daniel, Hot Springs, Ark. tf

INDUSTRIAL PRODUCTS COMPANY, IPCO Reloading lubricants, now at Box 14, Wakefield, Mass. tf

ANTIQUE AND OBSOLETE FIREARMS FOR collectors bought and sold, always a fine stock on hand. The House of Guns. 34 Alpine Place, Arlington, N. J. 11-45

20 SHOT MAGAZINE FOR 30-06 SPRINGFIELD $5.50 postpaid. B. K. Wingate, 470 Parkway, Trenton, N. J. 8-45

SHOTGUN COMPONENTS: 12 GAUGE ONLY. ⅛" cardboard wads, full length sized, primed, special wax treated, rimmed empty cases, Machine made rifled slugs, shotgun primers, send 10¢ for complete list of components. Handloaded ammunition, dies, gunsmith service and bluing. Jim Clark, Sporting Goods Co., 2029 W. Fondulac, Milwaukee, Wisconsin. 9-45

FREE! 8 PAGE BARGAIN SWAP LIST OF GUNS and other sports items, write today, describing guns, reels, rods, outboards, golf clubs, binoculars, scopes, radios, watches, etc., you have to trade (or sell for cash); receive our generous "Cash or Trade Offer" and the list by return mail, depend on America's biggest traders to get you what you can't obtain elsewhere. Klein's Sporting Goods, 505TE South Halsted, Chicago 7. 8-45

RIFLE CLUBS' SPECIAL PRICES ON ALL official N. R. A. Tournament Targets. T. G. Crain, 919 Millville Road, Altoona, Pennsylvania, 8-45

AMMUNITION—CUSTOM LOADS: 30-40, 30-30, 300 S, $4.00 box, Odd lot factory miscellaneous calibers, rifle, pistol, list for 3¢ stamp. Paul Ratliff, Hillyard, Washington, 9-45

AMMUNITION — EXPERT HANDLOADS, .38 Special service or Keith bullet, per box $1.75 per M $34.00, .45 auto factory reloads, $2.25 per box, per M $42.50. Morrison, 322½ S. 6th Springfield, Ill. 9-45

CATALOG LISTING PARTS AND ITEMS OF interest to collectors and muzzle loading gun shooters, also bayonets, swords, cartridge boxes, etc., price 15¢. House of Guns, Alpine Place, Arlington, N. J. 9-45

MUZZLE GUN SUPPLIES: ONE THOUSAND #11 percussion caps $2.85 f.o.b. black powder 6¼ pounds $4.00 f.o.b. Bureau of Mines license required for powder. Buck Shot sizes .30 to .68—one pound 25¢, five pounds $1.00 f.o.b., Musket flints—$1.00 per dozen prepaid, Minnie bullets $3.25 per 100. Rifled shotgun slugs—16 and 12 gauge 15¢ each or $13.50 per 100. Powder measure-charger, one to 100 grains $3.50 (for black powder only). Ned Roberts' "Cap Lock Rifle" $6.00; Cline's "Muzzle Loading Rifle," $7.00. Baxter's "For Beginners Only" each fan should have this 85¢. E. M. Farris, N&W Ry. Y.M.C.A., Portsmouth, Ohio. tf

FOR SALE—20 BOXES .30 REMINGTON AUTO cartridges, 170 gr. Silvertip $1.50 per box, Henry Hinkel, 5705 Madison St., Chicago, Illinois.

NEW CLASSIFIED RATE

EFFECTIVE WITH THE JUNE ISSUE the rate for classified advertising is 15 cents per word, minimum charge, $2.00; maximum number of words to one advertiser, 100. Name and address are included in word count and remittance must accompany the copy. This adjustment brings the classified rate more nearly in line with the display rate. Closing date remains the 5th of the month except that we reserve the right to limit advertising by publishing ads in the order received up to the limit of available space.

DIAMONDS CUT JEWELS OF TODAY

Splitting Hairs

. . . isn't close enough for the demands of today's Precision Optical Production. Argus Lenses and Prisms are ground and polished to invisible tolerances of millionths of an inch . . . that is 500 times finer than a human hair.

AWARDED TO PLANT 2 OPTICAL DIVISION

Argus Engineers and skilled craftsmen, using up-to-the-minute machines, have developed new techniques in meeting the critical demands of the War Department.

In consequence, the Optical and Visual performance of Argus Lenses has reached such a high standard that Argus production of postwar Telescopes and Spotting Scopes will be hard to surpass.

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Write for the 56 page booklet, "Good Pictures," published by Argus to solve your picture taking problems. Send 25c today to Argus, Incorporated, Ann Arbor, Mich. — Dept. O.

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GUNS, MODERN, ANTIQUE, ALL KINDS, AMmunition, loading tools and supplies. Geo. Brullesauer, 3957A Castleman, St. Louis 10, Missouri. 1-46

ILLUSTRATED 145 PAGE CATALOG OF Antique firearms and edged weapons 25¢. Robert Abels, 860 Lexington, Avenue, New York 21, New York. 1-46

FOR SALE—SMALL COLLECTION OF ANTIQUE guns, all shootable. W. D. Mitchell, 813 21st Street, Columbus, Georgia.

SALE—.219 SAVAGE, HORNET, EXCELLENT, 50 handloads, $30.00. Want Lyman 17A & 103 tang peepsight. J. D. Jerguson, 107 Hawkins St., Marietta, Georgia.

S&W .38 SPECIAL MILITARY 6" NICKEL, excellent, $50.00, Colt New Service .45 caliber, fair, $40.00, Sharps-Borchardt action only, good, $30.00. Winchester M-12 20 ga. full, excellent, $65.00, .45 Colt auto. Govt. excellent, $50.00. .44 Russian revolver, excellent, $65.00, H&R 10", .22 excellent, $45.00, 20X Mossberg Spotshot, good, $35.00, B&L Prismatic spotting scope, stand leather case, 35-26-19-12 eyepieces, $150.00. Paul A. Shepherd, 2 Western Ave., Westfield, Mass.

CUSTOM SPORTING RIFLES, .270'S, ACKLEY barrels, Bishop stocks, improved Mauser actions, 30-40 Krags, Bishop stocks, 3¢ stamp for details. Paul Ratliff, Hillyard, Washington. 9-45

SPORT JACKET MADE COHAMA WATER REpellent, something really different in sport jacket, sizes 34-46, write for descriptive circular. M. T. Harris, Piedmont, Missouri.

MY NEW PRICE LIST (#407) OF SINGLE specimen cartridges for cartridge collectors is mailed to any address for 20¢ (coin or stamps). Chas. Shattuck, Cherry Creek, N. Y.

BUILDERS LEAVEL-TRANSIT, WHITES MODEL 3000, extension tripod, 12 foot architects rod, perfect, $130.00, details on request. Harris Lamb, 963 Knox, Birmingham, Michigan.

ENGRAVED HAMMERLESS BALLARD, SPECIAL 30" Hubalek barrel, excellent, exceptional fine crotched walnut stock, oakleaf carved forearm and stock, $200.00. Joseph Weltzer, 252 W. 30th St., N. Y. C.

COLT NEW SERVICE ARMY 1909, .45 COLT, 5½", very good condition, Heiser holster, $50.00. Jack Hart, 915 West Micheltorena, Santa Barbara, California.

SAVAGE UTILITY: FACTORY MATCHED 16-28 Poly; 30-30 29S; $25-20 355 Weaver; sling, swivels on all, excellent in, good to very good out, shells for each, two covers, swell outfit, $82.50. L. L. Cook, Elkins, West Virginia.

OUR LIST OF MODERN ARMS WILL BE SENT on receipt of three cent stamp. Kimball Arms Company, Woburn, Mass. tf

SPRINGFIELD SPORTER 30-06 EARLY NO. re-heat-treated & blued, new '43 SA barrel, Bishop Monte-Carlo oil finish stock, 330Sx new scope Redfield Jr. Mount, altered bolt NS, 1¼" sling, block front, 50 rounds fresh FA ammunition 25 SP 180 gr. Ideal #3 tool 06 dies, Marbles rod, excellent in, good out, complete $165.00, Colt 011 auto. new, barrel, long & short triggers, Franzite grips, King micrometer rear unmounted, box shells, GI holster, very good, $55.00; Zeiss Zielklein, taper post, optically perfect, blue worn, $40.00, 100 fresh FA 150 gr. 30-06, $9.73; M.O. please. F. S. Fickett, 232 Fowler Avenue, San Francisco 16, California.

FOR SALE—OZARK TIMBERED LAND ON highway. Write for description. M. T. Harris, Piedmont, Missouri.

.220 SWIFT, HEAVY BARREL, HIGH NO. Springfield action, very fancy stock, scope blocks perfect, $150.00, Savage E.G. .300 caliber, 40 factory loads, perfect, $80.00, Ithaca skeet model 37S, 20 ga. fine stock, 50 loads, perfect, $110.00, Mauser 30-06, Lyman rear 48, fine fancy stock blank cost $25.00 in the raw, perfect, $135.00, Colt New Service 44-40, Ideal loading tools, special grips, 100 loads, 1000 primers, holster, very good, $75.00, Stevens .44 action fitted with 417 heavy accurate barrel and 417 forearm .22 L.R. scope blocks, barrel and action in excellent, $62.50, Litschert Model B 10X scope and mounts perfect, $90.00, all shipped express inspection if desired. Harold Hemmelgarn, Maria Stein, Ohio.

2R LOVELL ON 44½, SET TRIGGERS, LITschert 1¼ x 10 scope loading tools, components, very good, very accurate, $175.00, S&W K22 perfect in, very good out, pearl grips, holster $65.00, details on request, no checks. M. D. Perrin, 2201 Bryden Road, Columbus, Ohio.

22-250 MAUSER ACTION, PERFECT INSIDE and out, stock very good, $150.00, components extra. J. W. Smith, 526 So. Spruce, Wichita, Kansas.

CUSTOM 300 MAGNUM, WINCHESTER 70 ACtion, target weight, Hensoldt 2¼X scope, ammunition, $250.00, with Pacific tool $275.00, excellent. E. G. Pope, Lubbock, Texas.

FINE A2 SMITH DOUBLE EJECTOR, 12-30" full, Whitworth barrels 3" chambers, cowhide case, all very good $250.00, want lighter gun and cash adjustment. Winchester 12-16 Weaver choke 3 tubes, 28" fired 25 times, like new, $90.00. R. A. Compton, R. #2, Mt. Carmel, Illinois.

WINCHESTER MODEL 12-16 GA. FULL, BRAND new, $85.00, 12 ga. Lefever 30" full & modified, perfect, $52.50, 12 ga. Fulton 30" full & modified, perfect $52.50, 12 ga. Fox model B. 28" full and modified, perfect, $45.00, 12 ga. Tobin 30" full & modified, very good, $36.00, 16 ga. Springfield 30" full & modified, new, $45.00, Marlin model 39A, perfect, Weaver 29S scope, perfect, $75.00, money orders please. Clyde Cowan, Slaterville, Utah.

KRAG CUSTOM SPORTER, 22" BARREL, PERfect bluing, hand finished Peerless stock, Redfield rear, excellent plus inside, 60 factory Corelokts, $100.00. G. H. Grant, Alamogordo, New Mexico.

FOR SALE—AMMUNITION, HAVE RIFLE, shotgun and pistol, send for list. W. S. Brizendine, San Jacinto, P. O. Box 3517, Amarillo, Texas.

FOR SALE—L. C. SMITH SPECIALTY, 12 DOUble 32" barrels, F.F. ejectors, very good, $125.00. Leonard Mews, Hortonville, Wisconsin.

SAVAGE MODEL .430, 20 GAUGE, O&U 26" I.C.&M. excellent, price $43.00. King Stevens, R. #2, Cynthiana, Kentucky.

EXCELLENT NIEDNER BARREL, .35 NEWton tools and components, $35.00, Excellent, 10.75 Mauser barrel, matted rib, make rechamber or reline job, $18.00, Good 9mm. Mannlicher barrel, $10.00, New 99 Savage .250, $96.00. Want model 70-94 and Magnum Mauser action. Ketchikan Gun Repair, Box 983, Ketchikan, Alaska.

WINCHESTER MODEL 70, 7MM 24" BARREL, excellent to perfect complete with Stith mounted 330 Weaver scope, 48 WJS Lyman, 79 shells, a beauty $150.00. Money order or express inspection privilege. Douglas R. Turnbull, 717 River Road, Agawam, Mass.

SWIFT AND .270 DIES, $12.50 EACH M70, 30-06, Mignon 4X Stith mounts, recoil pad, case, very good, 40 rounds commercial $235.00. Handigun, very good, $20.00. Wanted 30 Newton dies for Pacific tool. Art Anderson, Campo, California.

ITHACA #4, 20 GA. 30" BARREL, CYL. & MOD. ventilated rib selective single trigger Beavertail forend recoil pad, 2 boxes shells factory perfect, $200.00. J. B. Pitchford, 300 Delhi St., Bossier City, La.

LATEST MODEL WINCHESTER 54, 30-06 SNIPers match rifle, Lyman sights, Super accurate, excellent $195.00, latest Winchester 54 Swift Redfield rear, two boxes shells, good, $150.00, Winchester model 70, 30-06 Weaver 330 Bridge mounts, six boxes hunting ammunition, excellent, $200.00, Enfield 30-06 Sporter Redfield sights, very good, $100.00, Colts Frontier 44-40 7½" barrel, Ideal tool holster empties etc., excellent $65.00, Winchester model 12, 12 ga. trap, stock slightly cracked rest very good, $100.00, Belgun Browning automatic 12 ga. inside excellent outside good, $100.00. Winchester model 12 20 ga. inside excellent outside good, late model $85.00, Parker Trojan 20 ga. M&F Beavertail forearm reconditioned, good, $100.00. Send $5.00 for c.o.d. examination. R. S. Cook, Alpena, So. Dak.

SAVAGE 19-33, EXCELLENT, EXTRAS, $50.00, Kodak Vigilant, syncronizer, $80.00. Stuart Tobias, 1230 Grandview, Columbus, Ohio.

AMERICAN RIFLEMAN, ORIGINAL WRAPpers, 1931-1935 $5.00 per year, 1936-1944 $3.00 per year. Frank Doherty, 3002 No. Cicero Ave., Chicago 41, Illinois.

HEAVY TARGET, 300 MAGNUM, HOFFMAN shoulder, Buhmiller barrel, Bishop target stock, 1917 action, scope blocks, no iron sights, excellent, $75.00. Hugh H. Gray, 71 Greenwood Avenue, Wheeling, W. Va.

WINCHESTER MODEL 12, STANDARD 12-30 full, solid rib, new Pigeon grade stock, extension forearm reblued, excellent, $110.00. Remington model 14, 30 reconditioned, new barrel, stock, forearm, reblued, box 170, excellent, $70.00. Allen Minnegan, Waterman, Illinois.

COLT ACE AND NATIONAL MATCH, BOTH have ivory grips, $90.00 each, L. C. Smith Specialty grade, 20 gauge Magnum, 3" chambers, selective single trigger, auto ejectors, Beavertail forearm 5 boxes shells, $200.00, Winchester Hi-Wall K-Hornet medium barrel 330 Weaver, Redfield Junior mount, about 100 Ks and regulars loaded, 200 Sisk 41 gr. 200 116 primers, $125.00. All guns excellent to perfect. Richard Clapper, 103 Kirkland Road, Rochester 11, New York.

MARLIN .22 AUTOMATIC, GOOD OR BETTER, first money order, $25.00. George Bambas, Richmond, Illinois.

AMMUNITION AVAILABLE TO QUALIFIED purchasers, list 10¢. Rudolph's, Atchison, Kansas.

KENTUCKY RIFLE, FAIR, $17.50, ANOTHER poor, $10.00, Springfield 45-70 rifle, good, $10.00, Winchester 32-20, 1892, fair, $16.00, Dutch Army rifle, good, $16.00, Scott 10 double, fair, $8.00, H&A 32 blued, good, $12.00, Colt 41 swing-out, fair, $16.00, Colt .38-40 Frontier, new barrel, holster, shells, $36.00, Want Krag, Bisley, automatic pistol. Ralph Drake, Osborne, Kansas.

30-06 CUSTOM MAUSER, 48, SLING PAD AND grip cap, very good to excellent, also new Pacific tool, dies and scale, Western & Service ammunition with outfit, all $155.00. R. F. Fiedler, 1404 Addison, Berkeley 2, California.

COLT DETECTIVE SPECIAL, PEARL GRIPS, sheeplined holster, $65.00, Colt Police Positive .38 Special rubber grips, 5" barrel, $43.00, S&W (Army release) M&P 5" barrel, $45.00, all above practically new, none have been shot. George Lear, 220 Arizona, Atlantic City, New Jersey.

DOUBLE BARREL RIFLE, .280 ELY, BY Charles Lancaster, London, oval bore, v.g. $250.00. R. Rudd, 4 Niagara Street, Springfield, Mass.

97 WINCHESTER 12, FULL, EXCELLENT EXcept stock scratched, leather case, $45.00. .45-60 Winchester 1883, fair in, good out, 19 cartridges, $20.00, 44-40 Winchester 1873, good, $20.00, .44 Colt Lightning rifle, poor to fair, $10.00, 200 F.A. .45 automatic cartridges, $10.00. A. M. Boll, 340 Tenth Avenue North., Wisconsin Rapids, Wisconsin.

SOFT FELT SHOTSHELL WADS, 12 & 16 GAUGE, ¼" thickness $3.65M; ⅜" $6.60M; ½" $7.00M. Write for complete stock list. Belding & Mull, Philipsburg, Pennsylvania.

CARL ZEISS "ASEMBI" BINOCULAR TELEscope, 12.5, 20, and 40 power, 3½" objective in carrying case, included in price is a heavy wooden tripod and a separate metal table stand, all equipment is in very good condition, recently cleaned and collimated by Zeiss of New York City, price $995.00. J. G. Kretschmer & Company, 315 So. 17th St., Omaha, Nebraska.

Available . . .

LYMAN ALASKAN SCOPES

WITH HARD COATED LENSES

The Lyman Alaskan All-Weather Scope is now available with all pre-war specifications plus hard coated lenses which greatly increase the light transmitting feature of the Alaskan. As a result, with coated lenses, the object shows up more clearly when light conditions are unfavorable.

In all of its essential details, the Alaskan All-Weather Scope is the basis of U. S. Models M81 and M82 sniping scopes as adopted by the U. S. Government.

As far as possible, any of the seven styles of reticules will be supplied.

Orders for Lyman Alaskan All-Weather scopes are accepted in limited quantities at present, especially when sold with mounts.

Send for Free Alaskan Folder

THE LYMAN GUN SIGHT CORP.

90 West St., Middlefield, Conn.

5000, .38 SPECIAL EMPTIES, $7.50 THOUSAND, 3000, 30-06 empties, $10.00 thousand, 300, 30-06-1918, $5.00 hundred, 500, 30-06 late issue, $10.00 hundred, 200, .45 ACP, $5.00 hundred, 1500, .38 Special handloads, $4.50 hundred, Lyman 48-C micrometer, new $10.00, Winchester 92 32-20, fair, $25.00. A. B. Keen, 7611 Gloucester Avenue, Norfolk 5, Virginia.

RELOADED AMMUNITION BARGAINS .270, 300 Savage, 30-06, 32 Remigton, 35 Remington, 10¢ each, 8mm. Mauser 11¢ each, .38 Special $3.00 per hundred, .45 AR, 45 ACP $4.00 per hundred 12 gauge heavy loaded shotgun shells, $2.50 per box, 12 gauge buckshot loads 15¢ per shell, send remittance with order adding 25¢ per shipment for packing, delivery six weeks. Commercial Shell Reloading, 14414 Cruse, Detroit 27, Michigan.

MODEL 32 REMINGTON O.U. 30" BARRELS, M&F, selective single trigger, A.E. Monte Carlo stock, butt pad, canvas case, very good, $125.00, L. C. Smith 20 gauge F.G., 28" barrels, M&F, auto ejectors, very good, $75.00, Browning auto 12 gauge barrel only, ribbed, cutts, 3 tubes, very good to excellent $50.00. F. D. Sweeney, 1104 San Pablo, Fresno, California.

REMINGTON 241 LONG RIFLE, EXCELLENT in, very good out, Lyman 56 peep, drilled and tapped for T mount, carrying sling, 300 shells, $50.00. Dr. Frank Knox, Fayetteville, Arkansas.

420, 30-06 1918's EXCELLENT @ 4¢, 350, .22 L.R. new primed 45-70 cases @ 6¢, 200 L.R. corrosive primers, 1 can #6 $2.75, 38 Remington muzzle loading plains rifle $14.00, Serviceman's violin and all accessories, $35.00, worth more. Gerald O. Kelver, 906 E. Jackson, Elkhart, Indiana.

1945 CATALOG OF FIREARMS FOR COLLECtors and M.L. shooters, 23 pages, 428 items and many fine drawings, price 25¢. The House of Guns, Alpine Place, Arlington, N. J. 10-45

HIGH GRADE HEAVILY ENGRAVED ENGLISH .303 double express rifle, Webley and Scott action, 26" barrels, ramp front sight, British 5 leaf folding rear, Goerz 2¾ power scope, detachable mounts, beautiful cheek-rest stock, finely checkered pistol grip and fore-end, plush lined oak case in leather shipping trunk, excellent, original cost $1,100.00, sacrifice at $400.00 The Modern Gun Shop, 125 Dawes Rd., Toronto, Canada.

KEEP YOUR GUNS CLEAN

COMBINATION CLEANING RODS FOR RIFLES AND SHOTGUNS

$1.50

NEW! SENSATIONAL!

A cleaning rod with attachments to clean rifles from .30 to .50 cal. and all shotguns, at a real money-saving price! Includes 3-piece steel rod with rugged plastic revolving handle, patch tip for rifles, and *special adaptor for attaching shotgun brushes and swabs, at no extra cost. (Pat. Applied For)*

#300 ..... **5-Piece Cleaning Set, $1.50 For .30 to .50 cal.**

#322 ..... **5-Piece Cleaning Set, $1.50 For .22 and .25 cal.**

Please order rods and brushes by number

SHOTGUN CLEANING BRUSHES
60c each or 2 for $1.10

One universal size cleans all gauge shotguns. Fits standard size rods. Loop end for patches. By attaching cord, can be used without cleaning rod.

#201 Bristle • #202 Brass

RIFLE CLEANING BRUSHES
15c each or 2 for 25c

Just what you need to keep your rifle or revolver in first-class condition. Brass bristles.

#122 for .22 cal. • #130 for .30 and .32 cal. • #138 for .35 and .38 cal. • #145 for .45 cal.

PISTOL CLEANING BRUSH, 15c

Overall length 8½ in. Put a few drops of oil on the brush and in a jiffy your pistol or revolver is clean.

#222 for .22 and .25 cal.
#240 for .30 to .45 cal.

#200 Rifle Cleaning Brush, 25c

Same as #222 above, except that it is 30 inches long.

Send Check or Money Order
Add 15c for Postage and Handling

Dealers—Write for Prices

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All Types of Machine Work

A fine precision tool, the 9-inch South Bend Lathe is well known in the metal working industries for its exacting, close tolerance performance. Adaptable to all classes of toolroom, experimental and laboratory work, it is equally desirable in production machine shops, automotive and aviation service shops, and maintenance shops. Because of its versatility, accuracy, and speed, the 9-inch South Bend Lathe is highly efficient on all types of machine work. Write for Catalog No. 100-D.

HOW TO RUN A LATHE
128-page book on the operation and care of engine lathes. Size 5½" x 8". Contains 365 illustrations. 25c postpaid.

SOUTH BEND LATHE WORKS
Lathe Builders For 38 Years
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WAR PRODUCTION still comes first... afterwards we'll be able to serve you better than ever

KING GUN SIGHT COMPANY

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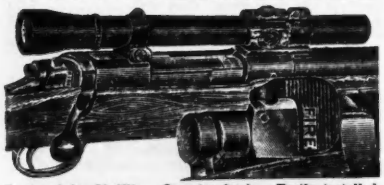

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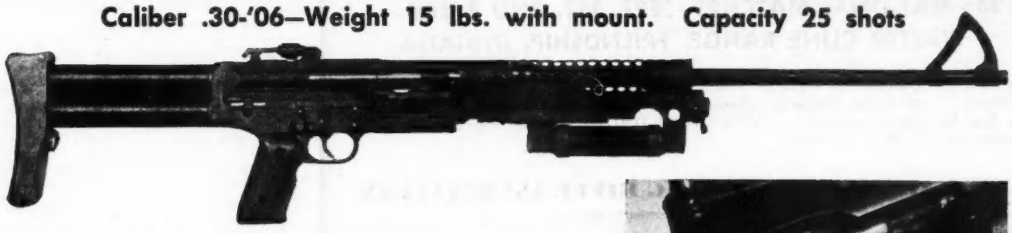

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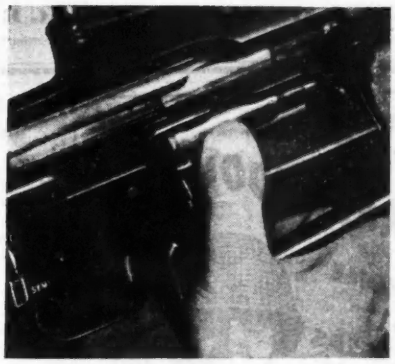

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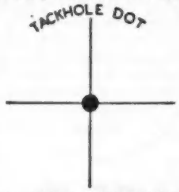

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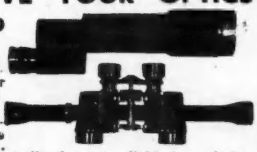

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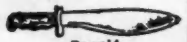

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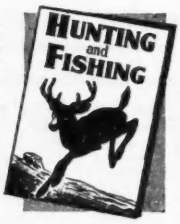

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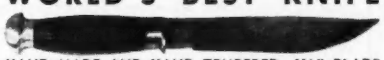

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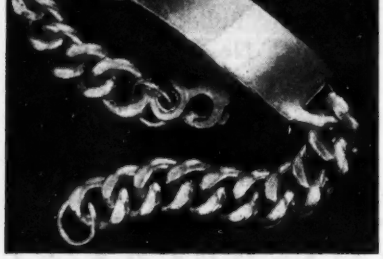

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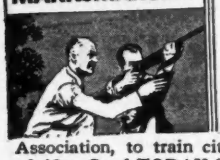

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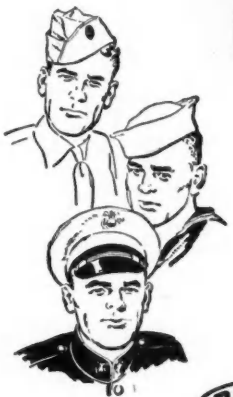

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